

SEQUENCE LISTING

<110> Vanderbilt University
Case Western Reserve University
The Brigham and Women's Hospital, Inc.
Mount, David B
Romero, Michael

<120> CLONING AND CHARACTERIZATION OF SLC26A6, SLC26A1, and SLC26A7
ANION EXCHANGERS

<130> 1242/50/2 PCT

<150> US 60/360,275

<151> 2002-02-28

<160> 96

<170> PatentIn version 3.2

<210> 1

<211> 2654

<212> DNA

<213> Homo sapiens

<400> 1
acgcgtccgc ctctagctcg agcagcagga gcagcccgca ccggacaact tgcgagccat
ggggctggcg gatgcgtcgg gaccgagggg cacacaggga ctgctgtctg caacacaagc
aatggacctg cggaggcgag actaccacat ggaacggccg ctgctgaacc aggagcattt
ggaggagctg gggcgctggg gctcagcacc taggaccac cagtggcgga cctggttgca
gtgctcccg tctcgggcct atgcccttct gctccaacac ctcccggttt tggctcgggt
accccggtat cctgtgcgtg actggctcct gggtagacct ttatccggcc tgagtgtggc
catcatgcag ctccgcagg gcttggccta cgcctcctg gctggattgc cccccgtgtt
tggcctctat agctccttct accctgtctt catctacttc ctgtttggca cttcccgga
catctccgtg gggacctttg ctgtcatgtc tgtgatggg ggcagtgtga cagaatccct
ggccccgcag gccttgaacg actccatgat caatgagaca gccagagatg ctgccccggg
acaggtggcc tccacactca gtgtcctggg tggcctcttc caggtggggc tgggcctgat
ccacttcggc ttcgtggta cctacctgtc agaacctctt gtccgaggct ataccacagc
tgcagctgtg caggtcttcg tctcacagct caagtatgtg tttggcctcc atctgagcag
ccactctggg ccactgtccc tcatctatac agtgctggag gtctgctgga agctgcccc
gagcaagggt ggcaccgtgg tcactgcagc tgtggctggg gtgggtgctg tgggtggtgaa
gctgttgaat gacaagctgc agcagcagct gcccatgccg ataccggggg agctgctcac
gctcatcggg gccacaggga tctcctatgg catgggtcta aagcacagat ttgaggtaga
tgtcgtgggc aacatccctg cagggtgggt gccccagtg gcccccaaca cccagctgtt
ctcaaagctc gtgggcagcg ccttcacat cgctgtgggt gggtttgcca ttgccatctc
actggggaag atcttcgccc tgaggcacgg ctaccgggtg gacagcaacc aggagctggg
ggcctgggc ctcagtaacc ttatcggagg catcttccag tgcttccccg tgagttgctc
tatgtctcgg agcctggtac aggagagcac cgggggcaac tcgcaggtg ctggagccat
ctcttccctt ttcactctcc tcatcattgt caaacttggg gaactcttcc atgacctgcc
caaggcggtc ctggcagcca tcatcattgt gaacctgaag ggcagtgtga ggcagctcag
cgacatgcgc tccctctgga aggccaatcg ggcggatctg cttatctggc tggtagcctt

cacggccacc atcttgctga acctggacct tggcttggtg gttgcggtca tcttctccct
 gctgctcgtg gtggtccgga cacagatgcc ccactactct gtcctggggc aggtgccaga
 cacggatatt tacagagatg tggcagagta ctcagaggcc aaggaagtcc ggggggtgaa
 ggtcttccgc tcctcggcca ccgtgtactt tgccaatgct gagttctaca gtgatgcgt
 gaagcagagg tgtggtgtgg atgtcgactt cctcatctcc cagaagaaga aactgctcaa
 gaagcaggag cagctgaagc tgaagcaact gcagaaagag gagaagcttc ggaaacaggc
 tgcctcccc aagggcgctt cagtttccat taatgtcaac accagccttg aagacatgag
 gagcaacaac gttgaggact gcaagatgat ggtgagctca ggagataaga tggaagatgc
 aacagccaat ggtcaagaag actccaaggc cccagatggg tccacactga aggcctggg
 cctgcctcag ccagacttcc acagcctcat cctggacctg ggtgccctct cctttgtgga
 cactgtgtgc ctcaagagcc tgaagaatat ttccatgac ttccgggaga ttgaggtgga
 ggtgtacatg ggggcctgcc acagccctgt ggtcagccag cttgaggctg ggcacttctt
 cgatgcaccc atcaccaaga agcatctctt tgctctgtc catgatgctg tcacctttgc
 cctccaacac ccgaggcctg tccccgacag cctgtttctg gtcaccagac tctgaacatg
 ctacatcctg cccaagactg cacctctgga ggtgcagggc acccttgaga agccctcac
 ccctaggccg cctccagggt ctaccagga gtccctcca tgtacacaca cacaactcag
 ggaaggaggt cctgggactc caagttcagc gctccaggtc tgggacaggg cctgcatgca
 gtcaggctgg cagtggcgcg gtacaggag ggaactgggt catatttttag cctcaggaat
 aaagatttgt ctgcaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
 aaaaaaaaaa aaaa

<210> 2
 <211> 758
 <212> PRT
 <213> Homo sapiens
 <400> 2

Met	Gly	Leu	Ala	Asp	Ala	Ser	Gly	Pro	Arg	Asp	Thr	Gln	Ala	Leu	Leu
1				5					10					15	
Ser	Ala	Thr	Gln	Ala	Met	Asp	Leu	Arg	Arg	Arg	Asp	Tyr	His	Met	Glu
			20					25					30		
Arg	Pro	Leu	Leu	Asn	Gln	Glu	His	Leu	Glu	Glu	Leu	Gly	Arg	Trp	Gly
		35				40						45			
Ser	Ala	Pro	Arg	Thr	His	Gln	Trp	Arg	Thr	Trp	Leu	Gln	Cys	Ser	Arg
		50				55					60				
Ala	Arg	Ala	Tyr	Ala	Leu	Leu	Leu	Gln	His	Leu	Pro	Val	Leu	Val	Trp
65					70					75					80
Leu	Pro	Arg	Tyr	Pro	Val	Arg	Asp	Trp	Leu	Leu	Gly	Asp	Leu	Leu	Ser
				85					90					95	
Gly	Leu	Ser	Val	Ala	Ile	Met	Gln	Leu	Pro	Gln	Gly	Leu	Ala	Tyr	Ala
			100					105						110	

Leu Leu Ala Gly Leu Pro Pro Val Phe Gly Leu Tyr Ser Ser Phe Tyr
 115 120 125
 Pro Val Phe Ile Tyr Phe Leu Phe Gly Thr Ser Arg His Ile Ser Val
 130 135 140
 Gly Thr Phe Ala Val Met Ser Val Met Val Gly Ser Val Thr Glu Ser
 145 150 155 160
 Leu Ala Pro Gln Ala Leu Asn Asp Ser Met Ile Asn Glu Thr Ala Arg
 165 170 175
 Asp Ala Ala Arg Val Gln Val Ala Ser Thr Leu Ser Val Leu Val Gly
 180 185 190
 Leu Phe Gln Val Gly Leu Gly Leu Ile His Phe Gly Phe Val Val Thr
 195 200 205
 Tyr Leu Ser Glu Pro Leu Val Arg Gly Tyr Thr Thr Ala Ala Ala Val
 210 215 220
 Gln Val Phe Val Ser Gln Leu Lys Tyr Val Phe Gly Leu His Leu Ser
 225 230 235 240
 Ser His Ser Gly Pro Leu Ser Leu Ile Tyr Thr Val Leu Glu Val Cys
 245 250 255
 Trp Lys Leu Pro Gln Ser Lys Val Gly Thr Val Val Thr Ala Ala Val
 260 265 270
 Ala Gly Val Val Leu Val Val Val Lys Leu Leu Asn Asp Lys Leu Gln
 275 280 285
 Gln Gln Leu Pro Met Pro Ile Pro Gly Glu Leu Leu Thr Leu Ile Gly
 290 295 300
 Ala Thr Gly Ile Ser Tyr Gly Met Gly Leu Lys His Arg Phe Glu Val
 305 310 315 320
 Asp Val Val Gly Asn Ile Pro Ala Gly Leu Val Pro Pro Val Ala Pro
 325 330 335
 Asn Thr Gln Leu Phe Ser Lys Leu Val Gly Ser Ala Phe Thr Ile Ala
 340 345 350
 Val Val Gly Phe Ala Ile Ala Ile Ser Leu Gly Lys Ile Phe Ala Leu
 355 360 365
 Arg His Gly Tyr Arg Val Asp Ser Asn Gln Glu Leu Val Ala Leu Gly
 370 375 380
 Leu Ser Asn Leu Ile Gly Gly Ile Phe Gln Cys Phe Pro Val Ser Cys
 385 390 395 400
 Ser Met Ser Arg Ser Leu Val Gln Glu Ser Thr Gly Gly Asn Ser Gln
 405 410 415
 Val Ala Gly Ala Ile Ser Ser Leu Phe Ile Leu Leu Ile Ile Val Lys
 420 425 430
 Leu Gly Glu Leu Phe His Asp Leu Pro Lys Ala Val Leu Ala Ala Ile
 435 440 445
 Ile Ile Val Asn Leu Lys Gly Met Leu Arg Gln Leu Ser Asp Met Arg
 450 455 460
 Ser Leu Trp Lys Ala Asn Arg Ala Asp Leu Leu Ile Trp Leu Val Thr
 465 470 475 480

Phe Thr Ala Thr Ile Leu Leu Asn Leu Asp Leu Gly Leu Val Val Ala
 485 490 495
 Val Ile Phe Ser Leu Leu Leu Val Val Val Arg Thr Gln Met Pro His
 500 505 510
 Tyr Ser Val Leu Gly Gln Val Pro Asp Thr Asp Ile Tyr Arg Asp Val
 515 520 525
 Ala Glu Tyr Ser Glu Ala Lys Glu Val Arg Gly Val Lys Val Phe Arg
 530 535 540
 Ser Ser Ala Thr Val Tyr Phe Ala Asn Ala Glu Phe Tyr Ser Asp Ala
 545 550 555 560
 Leu Lys Gln Arg Cys Gly Val Asp Val Asp Phe Leu Ile Ser Gln Lys
 565 570 575
 Lys Lys Leu Leu Lys Lys Gln Glu Gln Leu Lys Leu Lys Gln Leu Gln
 580 585 590
 Lys Glu Glu Lys Leu Arg Lys Gln Ala Ala Ser Pro Lys Gly Ala Ser
 595 600 605
 Val Ser Ile Asn Val Asn Thr Ser Leu Glu Asp Met Arg Ser Asn Asn
 610 615 620
 Val Glu Asp Cys Lys Met Met Val Ser Ser Gly Asp Lys Met Glu Asp
 625 630 635 640
 Ala Thr Ala Asn Gly Gln Glu Asp Ser Lys Ala Pro Asp Gly Ser Thr
 645 650 655
 Leu Lys Ala Leu Gly Leu Pro Gln Pro Asp Phe His Ser Leu Ile Leu
 660 665 670
 Asp Leu Gly Ala Leu Ser Phe Val Asp Thr Val Cys Leu Lys Ser Leu
 675 680 685
 Lys Asn Ile Phe His Asp Phe Arg Glu Ile Glu Val Glu Val Tyr Met
 690 695 700
 Ala Ala Cys His Ser Pro Val Val Ser Gln Leu Glu Ala Gly His Phe
 705 710 715 720
 Phe Asp Ala Ser Ile Thr Lys Lys His Leu Phe Ala Ser Val His Asp
 725 730 735
 Ala Val Thr Phe Ala Leu Gln His Pro Arg Pro Val Pro Asp Ser Pro
 740 745 750
 Val Ser Val Thr Arg Leu
 755

<210> 3

<211> 2748

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (252)..(2468)

<400> 3

aaagaggctt tctcaccagc caaagttcag gtactgcccc tgtctgagtt tggacatgtg

gccacagat gccagctggg ggctggaata ctgtaccttg atcttagggc ctggaaaaat

caggtaggta actctctggt cctaggtgga ggtgtagggg aggttgggcc agggatgcct

tcactgtgtc tctctgggtct tgccacccca gaccgaggga cacacaggca ctgctgtctg

caacacaagc a atg gac ctg cgg agg cga gac tac cac atg gaa cgg ccg
Met Asp Leu Arg Arg Arg Asp Tyr His Met Glu Arg Pro
1 5 10

ctg ctg aac cag gag cat ttg gag gag ctg ggg cgc tgg ggc tca gca
Leu Leu Asn Gln Glu His Leu Glu Glu Leu Gly Arg Trp Gly Ser Ala
15 20 25

cct agg acc cac cag tgg cgg acc tgg ttg cag tgc tcc cgt gct cgg
Pro Arg Thr His Gln Trp Arg Thr Trp Leu Gln Cys Ser Arg Ala Arg
30 35 40 45

gcc tat gcc ctt ctg ctc caa cac ctc ccg gtt ttg gtc tgg tta ccc
Ala Tyr Ala Leu Leu Leu Gln His Leu Pro Val Leu Val Trp Leu Pro
50 55 60

cgg tat cct gtg cgt gac tgg ctc ctg ggt gac ctg tta tcc ggc ctg
Arg Tyr Pro Val Arg Asp Trp Leu Leu Gly Asp Leu Leu Ser Gly Leu
65 70 75

agt gtg gcc atc atg cag ctt ccg cag ggc ttg gcc tac gcc ctc ctg
Ser Val Ala Ile Met Gln Leu Pro Gln Gly Leu Ala Tyr Ala Leu Leu
80 85 90

gct gga ttg ccc ccc gtg ttt ggc ctc tat agc tcc ttc tac cct gtc
Ala Gly Leu Pro Pro Val Phe Gly Leu Tyr Ser Ser Phe Tyr Pro Val
95 100 105

ttc atc tac ttc ctg ttt ggc act tcc cgg cac atc tcc gtg ggg acc
Phe Ile Tyr Phe Leu Phe Gly Thr Ser Arg His Ile Ser Val Gly Thr
110 115 120 125

ttt gct gtc atg tct gtg atg gtg ggc agt gtg aca gaa tcc ctg gcc
Phe Ala Val Met Ser Val Met Val Gly Ser Val Thr Glu Ser Leu Ala
130 135 140

ccg cag gcc ttg aac gac tcc atg atc aat gag aca gcc aga gat gct
Pro Gln Ala Leu Asn Asp Ser Met Ile Asn Glu Thr Ala Arg Asp Ala
145 150 155

gcc cgg gta cag gtg gcc tcc aca ctc agt gtc ctg gtt ggc ctc ttc
Ala Arg Val Gln Val Ala Ser Thr Leu Ser Val Leu Val Gly Leu Phe
160 165 170

cag gtg ggg ctg ggc ctg atc cac ttc ggc ttc gtg gtc acc tac ctg
Gln Val Gly Leu Gly Leu Ile His Phe Gly Phe Val Val Thr Tyr Leu
175 180 185

tca gaa cct ctt gtc cga ggc tat acc aca gct gca gct gtg cag gtc
Ser Glu Pro Leu Val Arg Gly Tyr Thr Thr Ala Ala Ala Val Gln Val
190 195 200 205

ttc gtc tca cag ctc aag tat gtg ttt ggc ctc cat ctg agc agc cac
Phe Val Ser Gln Leu Lys Tyr Val Phe Gly Leu His Leu Ser Ser His
210 215 220

tct ggg cca ctg tcc ctc atc tat aca gtg ctg gag gtc tgc tgg aag
Ser Gly Pro Leu Ser Leu Ile Tyr Thr Val Leu Glu Val Cys Trp Lys
225 230 235

ctg ccc cag agc aag gtt ggc acc gtg gtc act gca gct gtg gct ggg
Leu Pro Gln Ser Lys Val Gly Thr Val Val Thr Ala Ala Val Ala Gly
240 245 250

```

gtg gtg ctc gtg gtg gtg aag ctg ttg aat gac aag ctg cag cag cag
Val Val Leu Val Val Val Lys Leu Leu Asn Asp Lys Leu Gln Gln Gln
255                               260                               265

ctg ccc atg ccg ata ccc ggg gag ctg ctc acg ctc atc ggg gcc aca
Leu Pro Met Pro Ile Pro Gly Glu Leu Leu Thr Leu Ile Gly Ala Thr
270                               275                               280                               285

ggc atc tcc tat ggc atg ggt cta aag cac aga ttt gag gta gat gtc
Gly Ile Ser Tyr Gly Met Gly Leu Lys His Arg Phe Glu Val Asp Val
290                               295                               300

gtg ggc aac atc cct gca ggg ctg gtg ccc cca gtg gcc ccc aac acc
Val Gly Asn Ile Pro Ala Gly Leu Val Pro Pro Val Ala Pro Asn Thr
305                               310                               315

cag ctg ttc tca aag ctc gtg ggc agc gcc ttc acc atc gct gtg gtt
Gln Leu Phe Ser Lys Leu Val Gly Ser Ala Phe Thr Ile Ala Val Val
320                               325                               330

ggg ttt gcc att gcc atc tca ctg ggg aag atc ttc gcc ctg agg cac
Gly Phe Ala Ile Ala Ile Ser Leu Gly Lys Ile Phe Ala Leu Arg His
335                               340                               345

ggc tac cgg gtg gac agc aac cag gag ctg gtg gcc ctg ggc ctc agt
Gly Tyr Arg Val Asp Ser Asn Gln Glu Leu Val Ala Leu Gly Leu Ser
350                               355                               360                               365

aac ctt atc gga ggc atc ttc cag tgc ttc ccc gtg agt tgc tct atg
Asn Leu Ile Gly Gly Ile Phe Gln Cys Phe Pro Val Ser Cys Ser Met
370                               375                               380

tct cgg agc ctg gta cag gag agc acc ggg ggc aac tcg cag gtt gct
Ser Arg Ser Leu Val Gln Glu Ser Thr Gly Gly Asn Ser Gln Val Ala
385                               390                               395

gga gcc atc tct tcc ctt ttc atc ctc ctc atc att gtc aaa ctt ggg
Gly Ala Ile Ser Ser Leu Phe Ile Leu Leu Ile Ile Val Lys Leu Gly
400                               405                               410

gaa ctc ttc cat gac ctg ccc aag gcg gtc ctg gca gcc atc atc att
Glu Leu Phe His Asp Leu Pro Lys Ala Val Leu Ala Ala Ile Ile Ile
415                               420                               425

gtg aac ctg aag ggc atg ctg agg cag ctc agc gac atg cgc tcc ctc
Val Asn Leu Lys Gly Met Leu Arg Gln Leu Ser Asp Met Arg Ser Leu
430                               435                               440                               445

tgg aag gcc aat cgg gcg gat ctg ctt atc tgg ctg gtg acc ttc acg
Trp Lys Ala Asn Arg Ala Asp Leu Leu Ile Trp Leu Val Thr Phe Thr
450                               455                               460

gcc acc atc ttg ctg aac ctg gac ctt ggc ttg gtg gtt gcg gtc atc
Ala Thr Ile Leu Leu Asn Leu Asp Leu Gly Leu Val Val Ala Val Ile
465                               470                               475

ttc tcc ctg ctg ctc gtg gtg gtc cgg aca cag atg ccc cac tac tct
Phe Ser Leu Leu Leu Val Val Val Arg Thr Gln Met Pro His Tyr Ser
480                               485                               490

gtc ctg ggg cag gtg cca gac acg gat att tac aga gat gtg gca gag
Val Leu Gly Gln Val Pro Asp Thr Asp Ile Tyr Arg Asp Val Ala Glu
495                               500                               505

tac tca gag gcc aag gaa gtc cgg ggg gtg aag gtc ttc cgc tcc tcg
Tyr Ser Glu Ala Lys Glu Val Arg Gly Val Lys Val Phe Arg Ser Ser
510                               515                               520                               525

```

```

gcc acc gtg tac ttt gcc aat gct gag ttc tac agt gat gcg ctg aag
Ala Thr Val Tyr Phe Ala Asn Ala Glu Phe Tyr Ser Asp Ala Leu Lys
                    530                    535                    540

cag agg tgt ggt gtg gat gtc gac ttc ctc atc tcc cag aag aag aaa
Gln Arg Cys Gly Val Asp Val Asp Phe Leu Ile Ser Gln Lys Lys Lys
                    545                    550                    555

ctg ctc aag aag cag gag cag ctg aag ctg aag caa ctg cag aaa gag
Leu Leu Lys Lys Gln Glu Gln Leu Lys Leu Lys Gln Leu Gln Lys Glu
                    560                    565                    570

gag aag ctt cgg aaa cag gct gcc tcc ccc aag ggc gcc tca gtt tcc
Glu Lys Leu Arg Lys Gln Ala Ala Ser Pro Lys Gly Ala Ser Val Ser
                    575                    580                    585

att aat gtc aac acc agc ctt gaa gac atg agg agc aac aac gtt gag
Ile Asn Val Asn Thr Ser Leu Glu Asp Met Arg Ser Asn Asn Val Glu
590                    595                    600                    605

gac tgc aag atg atg cag gtg agc tca gga gat aag atg gaa gat gca
Asp Cys Lys Met Met Gln Val Ser Ser Gly Asp Lys Met Glu Asp Ala
                    610                    615                    620

aca gcc aat ggt caa gaa gac tcc aag gcc cca gat ggg tcc aca ctg
Thr Ala Asn Gly Gln Glu Asp Ser Lys Ala Pro Asp Gly Ser Thr Leu
                    625                    630                    635

aag gcc ctg ggc ctg cct cag cca gac ttc cac agc ctc atc ctg gac
Lys Ala Leu Gly Leu Pro Gln Pro Asp Phe His Ser Leu Ile Leu Asp
                    640                    645                    650

ctg ggt gcc ctc tcc ttt gtg gac act gtg tgc ctc aag agc ctg aag
Leu Gly Ala Leu Ser Phe Val Asp Thr Val Cys Leu Lys Ser Leu Lys
                    655                    660                    665

aat att ttc cat gac ttc cgg gag att gag gtg gag gtg tac atg gcg
Asn Ile Phe His Asp Phe Arg Glu Ile Glu Val Glu Val Tyr Met Ala
670                    675                    680                    685

gcc tgc cac agc cct gtg gtc agc cag ctt gag gct ggg cac ttc ttc
Ala Cys His Ser Pro Val Val Ser Gln Leu Glu Ala Gly His Phe Phe
                    690                    695                    700

gat gca tcc atc acc aag aag cat ctc ttt gcc tct gtc cat gat gct
Asp Ala Ser Ile Thr Lys Lys His Leu Phe Ala Ser Val His Asp Ala
                    705                    710                    715

gtc acc ttt gcc ctc caa cac ccg agg cct gtc ccc gac agc cct gtt
Val Thr Phe Ala Leu Gln His Pro Arg Pro Val Pro Asp Ser Pro Val
                    720                    725                    730

tcg gtc acc aga ctc tga acatgctaca tcctgcccaa gactgcacct
Ser Val Thr Arg Leu
                    735

ctggaggtgc agggcaccct tgagaagccc ctcaccccta ggccgcctcc aggtgctacc
caggagtccc ctccatgtac acacacacaa ctcaggggaag gaggtcctgg gactccaagt
tcagcgctcc aggtctggga cagggcctgc atgcagtcag gctggcagtg gcgcggtaca
gggaggggaac tgggtgcatat tttagcctca ggaataaaga tttgtctgca aaaaaaaaaa
aaaaaaaaaa

```

<210> 4
 <211> 738
 <212> PRT
 <213> Homo sapiens
 <400> 4

```

Met Asp Leu Arg Arg Arg Asp Tyr His Met Glu Arg Pro Leu Leu Asn
1          5          10          15

Gln Glu His Leu Glu Glu Leu Gly Arg Trp Gly Ser Ala Pro Arg Thr
          20          25          30

His Gln Trp Arg Thr Trp Leu Gln Cys Ser Arg Ala Arg Ala Tyr Ala
          35          40          45

Leu Leu Leu Gln His Leu Pro Val Leu Val Trp Leu Pro Arg Tyr Pro
50          55          60

Val Arg Asp Trp Leu Leu Gly Asp Leu Leu Ser Gly Leu Ser Val Ala
65          70          75          80

Ile Met Gln Leu Pro Gln Gly Leu Ala Tyr Ala Leu Leu Ala Gly Leu
          85          90          95

Pro Pro Val Phe Gly Leu Tyr Ser Ser Phe Tyr Pro Val Phe Ile Tyr
          100          105          110

Phe Leu Phe Gly Thr Ser Arg His Ile Ser Val Gly Thr Phe Ala Val
          115          120          125

Met Ser Val Met Val Gly Ser Val Thr Glu Ser Leu Ala Pro Gln Ala
          130          135          140

Leu Asn Asp Ser Met Ile Asn Glu Thr Ala Arg Asp Ala Ala Arg Val
          145          150          155          160

Gln Val Ala Ser Thr Leu Ser Val Leu Val Gly Leu Phe Gln Val Gly
          165          170          175

Leu Gly Leu Ile His Phe Gly Phe Val Val Thr Tyr Leu Ser Glu Pro
          180          185          190

Leu Val Arg Gly Tyr Thr Thr Ala Ala Ala Val Gln Val Phe Val Ser
          195          200          205

Gln Leu Lys Tyr Val Phe Gly Leu His Leu Ser Ser His Ser Gly Pro
          210          215          220

Leu Ser Leu Ile Tyr Thr Val Leu Glu Val Cys Trp Lys Leu Pro Gln
          225          230          235          240

Ser Lys Val Gly Thr Val Val Thr Ala Ala Val Ala Gly Val Val Leu
          245          250          255

Val Val Val Lys Leu Leu Asn Asp Lys Leu Gln Gln Gln Leu Pro Met
          260          265          270

Pro Ile Pro Gly Glu Leu Leu Thr Leu Ile Gly Ala Thr Gly Ile Ser
          275          280          285

Tyr Gly Met Gly Leu Lys His Arg Phe Glu Val Asp Val Val Gly Asn
          290          295          300

Ile Pro Ala Gly Leu Val Pro Pro Val Ala Pro Asn Thr Gln Leu Phe
          305          310          315          320

Ser Lys Leu Val Gly Ser Ala Phe Thr Ile Ala Val Val Gly Phe Ala
          325          330          335

```


Ile Ala Ile Ser Leu Gly Lys Ile Phe Ala Leu Arg His Gly Tyr Arg
 340 345 350
 Val Asp Ser Asn Gln Glu Leu Val Ala Leu Gly Leu Ser Asn Leu Ile
 355 360 365
 Gly Gly Ile Phe Gln Cys Phe Pro Val Ser Cys Ser Met Ser Arg Ser
 370 375 380
 Leu Val Gln Glu Ser Thr Gly Gly Asn Ser Gln Val Ala Gly Ala Ile
 385 390 395 400
 Ser Ser Leu Phe Ile Leu Leu Ile Ile Val Lys Leu Gly Glu Leu Phe
 405 410 415
 His Asp Leu Pro Lys Ala Val Leu Ala Ala Ile Ile Ile Val Asn Leu
 420 425 430
 Lys Gly Met Leu Arg Gln Leu Ser Asp Met Arg Ser Leu Trp Lys Ala
 435 440 445
 Asn Arg Ala Asp Leu Leu Ile Trp Leu Val Thr Phe Thr Ala Thr Ile
 450 455 460
 Leu Leu Asn Leu Asp Leu Gly Leu Val Val Ala Val Ile Phe Ser Leu
 465 470 475 480
 Leu Leu Val Val Val Arg Thr Gln Met Pro His Tyr Ser Val Leu Gly
 485 490 495
 Gln Val Pro Asp Thr Asp Ile Tyr Arg Asp Val Ala Glu Tyr Ser Glu
 500 505 510
 Ala Lys Glu Val Arg Gly Val Lys Val Phe Arg Ser Ser Ala Thr Val
 515 520 525
 Tyr Phe Ala Asn Ala Glu Phe Tyr Ser Asp Ala Leu Lys Gln Arg Cys
 530 535 540
 Gly Val Asp Val Asp Phe Leu Ile Ser Gln Lys Lys Lys Leu Leu Lys
 545 550 555 560
 Lys Gln Glu Gln Leu Lys Leu Lys Gln Leu Gln Lys Glu Glu Lys Leu
 565 570 575
 Arg Lys Gln Ala Ala Ser Pro Lys Gly Ala Ser Val Ser Ile Asn Val
 580 585 590
 Asn Thr Ser Leu Glu Asp Met Arg Ser Asn Asn Val Glu Asp Cys Lys
 595 600 605
 Met Met Gln Val Ser Ser Gly Asp Lys Met Glu Asp Ala Thr Ala Asn
 610 615 620
 Gly Gln Glu Asp Ser Lys Ala Pro Asp Gly Ser Thr Leu Lys Ala Leu
 625 630 635 640
 Gly Leu Pro Gln Pro Asp Phe His Ser Leu Ile Leu Asp Leu Gly Ala
 645 650 655
 Leu Ser Phe Val Asp Thr Val Cys Leu Lys Ser Leu Lys Asn Ile Phe
 660 665 670
 His Asp Phe Arg Glu Ile Glu Val Glu Val Tyr Met Ala Ala Cys His
 675 680 685
 Ser Pro Val Val Ser Gln Leu Glu Ala Gly His Phe Phe Asp Ala Ser
 690 695 700

Ile	Thr	Lys	Lys	His	Leu	Phe	Ala	Ser	Val	His	Asp	Ala	Val	Thr	Phe
705					710					715					720
Ala	Leu	Gln	His	Pro	Arg	Pro	Val	Pro	Asp	Ser	Pro	Val	Ser	Val	Thr
				725					730					735	

Arg Leu

```

<210> 5
<211> 2612
<212> DNA
<213> Mus musculus
<400> 5
aagttcttggg cctggcgcca ctttctagcc ggtagtggcc tcctggggga gctgtttgaa
aagcgggtaca cgagttaccc tctgagggcc atgggacttc ccgatgggtc cgaccaaggg
acacatcaga cgcaggcact cctgtctgca gccaagaaa tggagctgca gaggagagac
taccatgtgg aaaggccatt gctgaaccag gagcagctag aagatctggg gcattggggc
ccagcggcga agaccaccca gtggcgaact tggttccgat gctcccgtgc tcgggcccac
tctcttctgc tccagcacgt tccagtctcg ggctgggttac cccgggtatcc tgtgcgtgaa
tggctcctgg gtgatctgtt atctggcctg agtgtggcca tcatgcagct tcctcagggc
ttggcctatg cccttctggc gggattgcct cctatgtttg gtctgtacag ttctttctac
cccgcttca tctacttctt gtttgggtacc tccagacaca tctctgtggg gacctttgct
gtaatgtctg tgatgggtggg cagtgtgaca gaatctctga cagcagataa ggccttcgtg
caaggcttga atgccacagc tgatgatgca cgcgtgcagg tggcctacac actcagcttc
ctggctcggc tcttccaggt ggggctgggc ctggtacact tcggcttcgt tgtcacctac
ctgtcagagc ctctgggtccg cagctatacc acggctgcat ctgtgcaagt cctcgtctct
cagctcaagt atgtgtttgg catcaaaactc agcagtcact ctggggccact gtccgttacc
tatacagtgc tggaggtctg tgcccagctc cctgagactg tgcccggcac cgtggtcacg
gcgattgtgg caggagtggc cttgggtactg gtgaagctac ttaatgagaa gctgcatcgg
cgtctgcccc tgcccatccc tggggaacta ctcacgctca ttggggccac tggattttcc
tatggtgtga agctgaatga cagattcaag gtcgatgtgg tgggcaacat caccacaggg
ctcatacccc cgttggcacc caagacagag ctgtttgcaa cgcttgtggg aaatgccttt
gccattgctg tgggtgggctt cgccattgcc atctcactgg ggaagatctt tgccctgagg
catggctacc gtgtggacag taaccaggag ctggtagccc ttggcctcag taacctcatt
ggaggcttct tccagtgtct ccccgtagac tgctccatgt ctcgagctt ggtacaggag
agcacgggag gcaacacaca ggttgctgga gctgtatctt ccctttttat ctttcttatt
atcgtcaaac ttggggaact cttccgagac ctgcccgaagg ccgtcctggc tgctgtcatt
attgtgaacc taaagggcat gatgaagcag ttctcagaca tctgctctct ttggaaggca
aacagagtgg acctgtctaat ctggctgggtg acctttgtgg ccacaatcct gctgaacctg
gacattggcc tggcagtttc catagtcttc tccttgctgc tcgtggctgt ccgaatgcag

```

ctgccccatt actccgtcct ggggcagggt ccagatacgg atatttatag agacgtggca
 gaatactctg gggccaagga ggtcccgggt gtgaaagtct tccgttcctc agccacgctg
 tacttcgcca atgctgagct ctacagcgac tctctgaaag agaagtgcgg tgtagatgtt
 gacccctca tcaccagaa gaagaaacga atcaaaaagc aggagatgaa gttaaagcga
 atgaagaaag ccaagaagtc ccagaaacag gatgcttctt ccaagatctc ctgagtttcc
 gtcaacgtca acaccaactt ggaagacgtc aaaagcaatg acgtcgaggg ctctgaggcc
 aagggtgacc aaggggagga gcttcaggat gtagtctcca gcaatcaaga agatgccaa
 gcccaccca tgacctcact gaagtccttg ggcctgcctc agccaggctt ccatagcctc
 atcctggacc tgagcacctc ctctttgtg gacactgtgt gcattaagag cctgaagaat
 attttccgtg acttccggga gattgaagtg gaagtgtaca tcgcagcctg ttacagtcct
 gtggtcgccc agcttgaagc tggacacttc tttgatgaat ctatcactaa gcagcatgtc
 tttgcctctg tccatgacgc tgtgacctt gccctcagcc accggaagtc tgtccctaag
 agcctgttt tggccaccaa actctgactt tgctgcagga gactgcctac ctctggagggt
 tgtgacaggt caccctcatg aaactccctg cctctgggccc acctccagggt gccacctggg
 actccattcc atgtacctgc acatacaatt catggatgga tgcctgggga ctcccaagtt
 cagtgtaca ggcctggggc aggggtattgc agtcaggctg gccttggtg ggtgctgaaa
 aggagctgat gtgggaatac agctttggga at

<210> 6
 <211> 758
 <212> PRT
 <213> Mus musculus
 <400> 6

Met	Gly	Leu	Pro	Asp	Gly	Ser	Asp	Gln	Gly	Thr	His	Gln	Thr	Gln	Ala
1				5					10					15	
Leu	Leu	Ser	Ala	Ala	Gln	Glu	Met	Glu	Leu	Gln	Arg	Arg	Asp	Tyr	His
			20					25					30		
Val	Glu	Arg	Pro	Leu	Leu	Asn	Gln	Glu	Gln	Leu	Glu	Asp	Leu	Gly	His
		35					40					45			
Trp	Gly	Pro	Ala	Ala	Lys	Thr	His	Gln	Trp	Arg	Thr	Trp	Phe	Arg	Cys
	50					55					60				
Ser	Arg	Ala	Arg	Ala	His	Ser	Leu	Leu	Leu	Gln	His	Val	Pro	Val	Leu
65					70					75					80
Gly	Trp	Leu	Pro	Arg	Tyr	Pro	Val	Arg	Glu	Trp	Leu	Leu	Gly	Asp	Leu
			85						90					95	
Leu	Ser	Gly	Leu	Ser	Val	Ala	Ile	Met	Gln	Leu	Pro	Gln	Gly	Leu	Ala
			100					105						110	
Tyr	Ala	Leu	Leu	Ala	Gly	Leu	Pro	Pro	Met	Phe	Gly	Leu	Tyr	Ser	Ser
	115						120					125			
Phe	Tyr	Pro	Val	Phe	Ile	Tyr	Phe	Leu	Phe	Gly	Thr	Ser	Arg	His	Ile
	130					135					140				

Ser	Val	Gly	Thr	Phe	Ala	Val	Met	Ser	Val	Met	Val	Gly	Ser	Val	Thr	145	150	155	160
Glu	Ser	Leu	Thr	Ala	Asp	Lys	Ala	Phe	Val	Gln	Gly	Leu	Asn	Ala	Thr	165	170	175	
Ala	Asp	Asp	Ala	Arg	Val	Gln	Val	Ala	Tyr	Thr	Leu	Ser	Phe	Leu	Val	180	185	190	
Gly	Leu	Phe	Gln	Val	Gly	Leu	Gly	Leu	Val	His	Phe	Gly	Phe	Val	Val	195	200	205	
Thr	Tyr	Leu	Ser	Glu	Pro	Leu	Val	Arg	Ser	Tyr	Thr	Thr	Ala	Ala	Ser	210	215	220	
Val	Gln	Val	Leu	Val	Ser	Gln	Leu	Lys	Tyr	Val	Phe	Gly	Ile	Lys	Leu	225	230	235	240
Ser	Ser	His	Ser	Gly	Pro	Leu	Ser	Val	Ile	Tyr	Thr	Val	Leu	Glu	Val	245	250	255	
Cys	Ala	Gln	Leu	Pro	Glu	Thr	Val	Pro	Gly	Thr	Val	Val	Thr	Ala	Ile	260	265	270	
Val	Ala	Gly	Val	Ala	Leu	Val	Leu	Val	Lys	Leu	Leu	Asn	Glu	Lys	Leu	275	280	285	
His	Arg	Arg	Leu	Pro	Leu	Pro	Ile	Pro	Gly	Glu	Leu	Leu	Thr	Leu	Ile	290	295	300	
Gly	Ala	Thr	Gly	Ile	Ser	Tyr	Gly	Val	Lys	Leu	Asn	Asp	Arg	Phe	Lys	305	310	315	320
Val	Asp	Val	Val	Gly	Asn	Ile	Thr	Thr	Gly	Leu	Ile	Pro	Pro	Val	Ala	325	330	335	
Pro	Lys	Thr	Glu	Leu	Phe	Ala	Thr	Leu	Val	Gly	Asn	Ala	Phe	Ala	Ile	340	345	350	
Ala	Val	Val	Gly	Phe	Ala	Ile	Ala	Ile	Ser	Leu	Gly	Lys	Ile	Phe	Ala	355	360	365	
Leu	Arg	His	Gly	Tyr	Arg	Val	Asp	Ser	Asn	Gln	Glu	Leu	Val	Ala	Leu	370	375	380	
Gly	Leu	Ser	Asn	Leu	Ile	Gly	Gly	Phe	Phe	Gln	Cys	Phe	Pro	Val	Ser	385	390	395	400
Cys	Ser	Met	Ser	Arg	Ser	Leu	Val	Gln	Glu	Ser	Thr	Gly	Gly	Asn	Thr	405	410	415	
Gln	Val	Ala	Gly	Ala	Val	Ser	Ser	Leu	Phe	Ile	Leu	Leu	Ile	Ile	Val	420	425	430	
Lys	Leu	Gly	Glu	Leu	Phe	Arg	Asp	Leu	Pro	Lys	Ala	Val	Leu	Ala	Ala	435	440	445	
Val	Ile	Ile	Val	Asn	Leu	Lys	Gly	Met	Met	Lys	Gln	Phe	Ser	Asp	Ile	450	455	460	
Cys	Ser	Leu	Trp	Lys	Ala	Asn	Arg	Val	Asp	Leu	Leu	Ile	Trp	Leu	Val	465	470	475	480
Thr	Phe	Val	Ala	Thr	Ile	Leu	Leu	Asn	Leu	Asp	Ile	Gly	Leu	Ala	Val	485	490	495	
Ser	Ile	Val	Phe	Ser	Leu	Leu	Leu	Val	Val	Val	Arg	Met	Gln	Leu	Pro	500	505	510	

His Tyr Ser Val Leu Gly Gln Val Pro Asp Thr Asp Ile Tyr Arg Asp
 515 520 525
 Val Ala Glu Tyr Ser Gly Ala Lys Glu Val Pro Gly Val Lys Val Phe
 530 535 540
 Arg Ser Ser Ala Thr Leu Tyr Phe Ala Asn Ala Glu Leu Tyr Ser Asp
 545 550 555 560
 Ser Leu Lys Glu Lys Cys Gly Val Asp Val Asp Pro Leu Ile Thr Gln
 565 570 575
 Lys Lys Lys Arg Ile Lys Lys Gln Glu Met Lys Leu Lys Arg Met Lys
 580 585 590
 Lys Ala Lys Lys Ser Gln Lys Gln Asp Ala Ser Ser Lys Ile Ser Ser
 595 600 605
 Val Ser Val Asn Val Asn Thr Asn Leu Glu Asp Val Lys Ser Asn Asp
 610 615 620
 Val Glu Gly Ser Glu Ala Lys Val His Gln Gly Glu Glu Leu Gln Asp
 625 630 635 640
 Val Val Ser Ser Asn Gln Glu Asp Ala Lys Ala Pro Thr Met Thr Ser
 645 650 655
 Leu Lys Ser Leu Gly Leu Pro Gln Pro Gly Phe His Ser Leu Ile Leu
 660 665 670
 Asp Leu Ser Thr Leu Ser Phe Val Asp Thr Val Cys Ile Lys Ser Leu
 675 680 685
 Lys Asn Ile Phe Arg Asp Phe Arg Glu Ile Glu Val Glu Val Tyr Ile
 690 695 700
 Ala Ala Cys Tyr Ser Pro Val Val Ala Gln Leu Glu Ala Gly His Phe
 705 710 715 720
 Phe Asp Glu Ser Ile Thr Lys Gln His Val Phe Ala Ser Val His Asp
 725 730 735
 Ala Val Thr Phe Ala Leu Ser His Arg Lys Ser Val Pro Lys Ser Pro
 740 745 750
 Val Leu Ala Thr Lys Leu
 755

<210> 7

<211> 2750

<212> DNA

<213> Mus musculus

<400> 7

aagttcttggg cctggcgcca ccttctagcc ggtagtgccc tcctggggga gctgtttgaa
 aagcgggtaca cgagttaccc tctgagggcc atgggacttc ccgatgggtc cgacttgaga
 gatcttgaag gaggggagag gggccgctga gatctcctgg agcccgcggt gcagagaatc
 tctgaagatc ttccttgctg ctgcactgct ccctcctcca ttggataccc aggttagaga
 gtcttcccag accaaggacg acatcagacg caggcactcc tgtctgcagc ccaagaaatg
 gagctgcaga ggagagacta ccatgtggaa aggccattgc tgaaccagga gcagctagaa
 gatctggggc attggggccc agcggcgaag acccaccagt ggcgaacttg gttccgatgc
 tcccgtgctc gggcccatc tcttctgctc cagcacgttc cagtctggg ctggttaccc

cggtatcctg tgcgtgaatg gtcctcgggt gatctgttat ctggcctgag tgtggccatc
atgcagcttc ctcagggcctt ggcctatgcc cttctggcgg gattgcctcc tatgtttggt
ctgtacagtt ctttctaccc cgtcttcac cacttccctgt ttggtacctc cagacacatc
tctgtgggga cctttgctgt aatgtctgtg atggtgggca gtgtgacaga atctctgaca
gcagataagg ccttcgtgca aggcttgaat gccacagctg atgatgcacg cgtgcagggtg
gcctacacac tcagcttcct ggtcggcctc ttccagggtg ggctgggcct ggtacacttc
ggcttcgttg tcacctacct gtcagagcct ctggtccgca gctataccac ggctgcatct
gtgcaagtcc tcgtctctca gctcaagtat gtgtttggca tcaaactcag cagtactctt
gggccactgt ccgttatcta tacagtgtg gaggtctgtg cccagctccc tgagactgtg
cccggcaccg tggtcacggc gattgtggca ggagtggcct tggtagctgt gaagctactt
aatgagaagc tgcacggcg tctgccccctg cccatccctg gggaactact cagctcatt
ggggccactg gtatttccta tgggtgtaag ctgaatgaca gattcaagggt cgtgtgggtg
ggcaacatca ccacagggt catacccccg gtggcaccca agacagagct gtttgcaacg
cttgtgggaa atgcctttgc cattgctgtg gtgggcttcg ccattgccat ctcactgggg
aagatctttg ccctgaggca tggctaccgt gtggacagta accaggagct ggtagccctt
ggcctcagta acctcattgg aggcttcttc cagtgtctcc ccgtgagctg ctccatgtct
cggagcttgg tacaggagag cacgggaggc aacacacagg ttgctggagc tgtatcttcc
ctttttatcc ttcttattat cgtcaaactt ggggaactct tccgagacct gcccaaggcc
gtcctggctg ctgtcattat tgtgaaccta aagggcata tgaagcagtt ctcagacatc
tgctctcttt ggaaggcaaa cagagtggac ctgctaactt ggctggtgac ctttgtggcc
acaatctgc tgaacctgga cattggcctg gcagtttcca tagtcttctc cttgtctgctc
gtggtcgtcc gaatgcagct gcccattac tccgtcctgg ggcagggtgcc agatacggat
atztatagag acgtggcaga atactctggg gccaaaggagg tcccgggtgt gaaagtcttc
cgttcctcag ccacgctgta cttcgccaat gctgagctct acagcgactc tctgaaagag
aagtgcggtg tagatgttga cccctcatc accagaaga agaaacgaat caaaaagcag
gagatgaagt taaagcgaat gaagaaagcc aagaagtccc agaaacagga tgcttcttcc
aagatctcct cagtttccgt caacgtcaac accaacttgg aagacgtcaa aagcaatgac
gtcgagggct ctgaggccaa ggtgcaccaa ggggaggagc ttcaggatgt agtctccagc
aatcaagaag atgccaaggc cccaacctg acctcactga agtccctggg cctgcctcag
ccaggcttcc atagcctcat cctggacctg agcaccctct cctttgtgga cactgtgtgc
attaagagcc tgaagaatat ttccgtgac ttccgggaga ttgaagtgga agtgtacatc
gcagcctgtt acagtctgtt ggtcgccag cttgaagctg gacacttctt tgatgaatct
atcactaagc agcatgtctt tgcctctgtc catgacgctg tgacctttgc cctcagccac
cggaagtctg tccctaagag ccctgttttg gccaccaaac tctgactttg ctgcaggaga

ctgcctacct ctggagggtg tgacagggtca ccctcatgaa actccctgcc tctggggccac
ctccagggtgc cacctgggac tccattccat gtacctgcac atacaattca tggatggatg
ccctggggact cccaagttca gtgctacagg cctgggggcag ggtattgcag tcaggctggc
cttggtctggg tgctgaaaag gagctgatgt gggaatacag ctttggggaat

<210> 8
<211> 735
<212> PRT
<213> Mus musculus
<400> 8

Met	Glu	Leu	Gln	Arg	Arg	Asp	Tyr	His	Val	Glu	Arg	Pro	Leu	Leu	Asn	1	5	10	15
Gln	Glu	Gln	Leu	Glu	Asp	Leu	Gly	His	Trp	Gly	Pro	Ala	Ala	Lys	Thr	20	25	30	
His	Gln	Trp	Arg	Thr	Trp	Phe	Arg	Cys	Ser	Arg	Ala	Arg	Ala	His	Ser	35	40	45	
Leu	Leu	Leu	Gln	His	Val	Pro	Val	Leu	Gly	Trp	Leu	Pro	Arg	Tyr	Pro	50	55	60	
Val	Arg	Glu	Trp	Leu	Leu	Gly	Asp	Leu	Leu	Ser	Gly	Leu	Ser	Val	Ala	65	70	75	80
Ile	Met	Gln	Leu	Pro	Gln	Gly	Leu	Ala	Tyr	Ala	Leu	Leu	Ala	Gly	Leu	85	90	95	
Pro	Pro	Met	Phe	Gly	Leu	Tyr	Ser	Ser	Phe	Tyr	Pro	Val	Phe	Ile	Tyr	100	105	110	
Phe	Leu	Phe	Gly	Thr	Ser	Arg	His	Ile	Ser	Val	Gly	Thr	Phe	Ala	Val	115	120	125	
Met	Ser	Val	Met	Val	Gly	Ser	Val	Thr	Glu	Ser	Leu	Thr	Ala	Asp	Lys	130	135	140	
Ala	Phe	Val	Gln	Gly	Leu	Asn	Ala	Thr	Ala	Asp	Asp	Ala	Arg	Val	Gln	145	150	155	160
Val	Ala	Tyr	Thr	Leu	Ser	Phe	Leu	Val	Gly	Leu	Phe	Gln	Val	Gly	Leu	165	170	175	
Gly	Leu	Val	His	Phe	Gly	Phe	Val	Val	Thr	Tyr	Leu	Ser	Glu	Pro	Leu	180	185	190	
Val	Arg	Ser	Tyr	Thr	Thr	Ala	Ala	Ser	Val	Gln	Val	Leu	Val	Ser	Gln	195	200	205	
Leu	Lys	Tyr	Val	Phe	Gly	Ile	Lys	Leu	Ser	Ser	His	Ser	Gly	Pro	Leu	210	215	220	
Ser	Val	Ile	Tyr	Thr	Val	Leu	Glu	Val	Cys	Ala	Gln	Leu	Pro	Glu	Thr	225	230	235	240
Val	Pro	Gly	Thr	Val	Val	Thr	Ala	Ile	Val	Ala	Gly	Val	Ala	Leu	Val	245	250	255	
Leu	Val	Lys	Leu	Leu	Asn	Glu	Lys	Leu	His	Arg	Arg	Leu	Pro	Leu	Pro	260	265	270	
Ile	Pro	Gly	Glu	Leu	Leu	Thr	Leu	Ile	Gly	Ala	Thr	Gly	Ile	Ser	Tyr	275	280	285	

Gly Val Lys Leu Asn Asp Arg Phe Lys Val Asp Val Val Gly Asn Ile
 290 295 300
 Thr Thr Gly Leu Ile Pro Pro Val Ala Pro Lys Thr Glu Leu Phe Ala
 305 310 315 320
 Thr Leu Val Gly Asn Ala Phe Ala Ile Ala Val Val Gly Phe Ala Ile
 325 330 335
 Ala Ile Ser Leu Gly Lys Ile Phe Ala Leu Arg His Gly Tyr Arg Val
 340 345 350
 Asp Ser Asn Gln Glu Leu Val Ala Leu Gly Leu Ser Asn Leu Ile Gly
 355 360 365
 Gly Phe Phe Gln Cys Phe Pro Val Ser Cys Ser Met Ser Arg Ser Leu
 370 375 380
 Val Gln Glu Ser Thr Gly Gly Asn Thr Gln Val Ala Gly Ala Val Ser
 385 390 395 400
 Ser Leu Phe Ile Leu Leu Ile Ile Val Lys Leu Gly Glu Leu Phe Arg
 405 410 415
 Asp Leu Pro Lys Ala Val Leu Ala Ala Val Ile Ile Val Asn Leu Lys
 420 425 430
 Gly Met Met Lys Gln Phe Ser Asp Ile Cys Ser Leu Trp Lys Ala Asn
 435 440 445
 Arg Val Asp Leu Leu Ile Trp Leu Val Thr Phe Val Ala Thr Ile Leu
 450 455 460
 Leu Asn Leu Asp Ile Gly Leu Ala Val Ser Ile Val Phe Ser Leu Leu
 465 470 475 480
 Leu Val Val Val Arg Met Gln Leu Pro His Tyr Ser Val Leu Gly Gln
 485 490 495
 Val Pro Asp Thr Asp Ile Tyr Arg Asp Val Ala Glu Tyr Ser Gly Ala
 500 505 510
 Lys Glu Val Pro Gly Val Lys Val Phe Arg Ser Ser Ala Thr Leu Tyr
 515 520 525
 Phe Ala Asn Ala Glu Leu Tyr Ser Asp Ser Leu Lys Glu Lys Cys Gly
 530 535 540
 Val Asp Val Asp Pro Leu Ile Thr Gln Lys Lys Lys Arg Ile Lys Lys
 545 550 555 560
 Gln Glu Met Lys Leu Lys Arg Met Lys Lys Ala Lys Lys Ser Gln Lys
 565 570 575
 Gln Asp Ala Ser Ser Lys Ile Ser Ser Val Ser Val Asn Val Asn Thr
 580 585 590
 Asn Leu Glu Asp Val Lys Ser Asn Asp Val Glu Gly Ser Glu Ala Lys
 595 600 605
 Val His Gln Gly Glu Glu Leu Gln Asp Val Val Ser Ser Asn Gln Glu
 610 615 620
 Asp Ala Lys Ala Pro Thr Met Thr Ser Leu Lys Ser Leu Gly Leu Pro
 625 630 635 640
 Gln Pro Gly Phe His Ser Leu Ile Leu Asp Leu Ser Thr Leu Ser Phe
 645 650 655

Val Asp Thr Val Cys Ile Lys Ser Leu Lys Asn Ile Phe Arg Asp Phe
660 665 670
Arg Glu Ile Glu Val Glu Val Tyr Ile Ala Ala Cys Tyr Ser Pro Val
675 680 685
Val Ala Gln Leu Glu Ala Gly His Phe Phe Asp Glu Ser Ile Thr Lys
690 695 700
Gln His Val Phe Ala Ser Val His Asp Ala Val Thr Phe Ala Leu Ser
705 710 715 720
His Arg Lys Ser Val Pro Lys Ser Pro Val Leu Ala Thr Lys Leu
725 730 735

<210> 9

<211> 2871

<212> DNA

<213> Mus musculus

<220>

<221> misc_feature

<222> (2850)..(2850)

<223> n is a, c, g, or t

<400> 9

gtacttgagc ctctgagaag agattcagca cttggcataa tgggcacact ggttccacag
cacactagtg cctgataagc caaagagcct ggtgtgacag gatggatgct tctcctgagc
cccaacagaa ggggtgggaca ctgggtactgg tccgacggca gccccctgtg tcccagggtc
tgctggaac actgaaggcc aggctgaaga agagctgcac ctgcagtatg ccatgtgctc
aggctctggt gcagggtctg ttctctgcca tacactggct gccccagtac cgccttaagg
aatacctagc aggtgatgtc atgtcaggat tggtcattgg cattatcctg gtgccacagg
ccatagccta ctactgctg gctgggttac aacctatcta tagcctctac acttctctt
ttgccaacct gatctacttc ctcatgggca cctcccgcca tgtaaatgtg ggcatcttca
gcctgctgtg tctcatgggt ggctcaggtg tggacagaga actccagttg gctggctttg
acccttccca ggattctcta gggcccaaga acaatgacag caccctcaac aactcagcta
caacactgat cattgggcta caggactgca gacgggactg ctatgccatt cgggttgcca
ctgcccttac tctgatggcc gggctttatc aggtcctcat gggatcctc cggctgggct
tcgtgtctac ctatctctca caaccactgc tcgatggctt tgctatggga gcttctgtga
ccatcttgac ttctcaggca aaacacatgc tgggtgtgca gatccctcgg caccagggcc
taggcatggt ggtccacaca tggttgagct tgctgcagaa tgtgggacag gccaacatat
gtgatgtggt caccagtgcc ctgtgcctag gagtgctgct ggcagctaag gaactctcag
atcgctaccg acaccgtctg aagggtgcaa taccacaga gttatttggt attgtggtg
ccacaattgt gtcccatctt ggacagctcc atacacggtt tgactcgagg gtggctggca
acattcccac tggttttgtg gccccacagg taccagacct taagataatg tggcgtgtg
ccctggatgc catgtcctg gccctcgtgg gctcagcctt ctccatctcc ttggcagaaa
tgtttgcccg tagtcatggc tactctgtca gtgccaacca agagctgcta gctgtgggct
gctgcaatgt gctgcctgcc ttcttccact gttttgccac tagtgctgct ctgtccaaaa

ctctggtgaa gatagccact ggctgccaga cccagttgtc cagtgtggtc agtgccgctg
 tgggtgttgc tggctgtctg gtgctggctc cactgtttca tgatctgcag cgatgtgtgc
 tagcttgtat cattgttgtc agcctgcggg gggcgctgcg caaggtgaag gatctccac
 aactttggcg gctaagccct gccgatgcac tggctctgggt ggctactgca gctacctgtg
 tgctagtacag caccgaggct ggactattag ctggagtgtt cttctccctg cttagcctgg
 caggccgtac acagcgtcca cgggctgccc ttcttgcccg aattggagac tccaccttct
 atgaggatgc tegtgaattt gagggcctcc tgccccacc tgagggtcga gtgttccgtt
 tcacagggtcc actttactac gccacaagg acttcttcct tcggctcttc tacagactca
 cagggttggg tgcagggcac tcagccacca ggaaggatca gggccccggag gtaggtgtca
 gtaacaggag tcttgtcgat ggcaaggatc tgggttcagt gagcagtggg gctgggctgg
 tggtagccctt ggcatttgggt ttccacacag tggtcattga ctgtgcacca ctgctgttcc
 tggatgtggc tggcatggcc acattgaaag acctccgcag agactacagg gccttggaca
 tcacctgct tctggcttgc tgcagtcctt cggtagagaga cacgttgaga aaagggggct
 tccttgggga agaacaggga gctgaaaatg agctgctatt cccagtggtg cacagtgtg
 tggaggctgc atatgcccg cgtgaggagc tgctggctgc tgactctgcc ctctagcagg
 gccctcaaga gcccacacct gtgttcacaa gccagtgtc tggtaggagt gtgtgaatga
 taaagtcatt agagatatc ccttggacca cctttgccct ggagaagcca gggaaactcca
 actaaggaaa ggaaagtgc gcacccttaa tacattcaag gattccaaac caagggttca
 gtgatctaga cactctacct ctgagtcac tgctgcccc tgggtgcctgt tcaaccaggg
 tagctgtacc cacacacatg atccctcagc ccacacagt cccagtttga tatactatgt
 tgtcatctta tctgaaacag aatcctgcaa attatatgac ctccaagatg ccaaaggagc
 actttcccat tccctgtacc accagggtacc agatatgagc tggatatatg gccaaagcctc
 aagggtctga atttctgaaa ggcctcctca tgccagggtc tcatcttgac tggacccttg
 caaaggcagc cacctgtctc agagccacag tccagtgtca ctttctaagg caatgtgact
 tatataacct caacctgacc ttggggcaca atgtctctat acagcttata ctggtaacca
 caatgtggta tatgtatggt acaaagccan acacagtaca ccctaacccc a

<210> 10
 <211> 704
 <212> PRT
 <213> Mus musculus
 <400> 10

Met	Asp	Ala	Ser	Pro	Glu	Pro	Gln	Gln	Lys	Gly	Gly	Thr	Leu	Val	Leu
1				5					10					15	
Val	Arg	Arg	Gln	Pro	Pro	Val	Ser	Gln	Gly	Leu	Leu	Glu	Thr	Leu	Lys
			20					25					30		
Ala	Arg	Leu	Lys	Lys	Ser	Cys	Thr	Cys	Ser	Met	Pro	Cys	Ala	Gln	Ala
		35					40					45			

Leu Val Gln Gly Leu Phe Pro Ala Ile His Trp Leu Pro Gln Tyr Arg
 50 55 60
 Leu Lys Glu Tyr Leu Ala Gly Asp Val Met Ser Gly Leu Val Ile Gly
 65 70 75 80
 Ile Ile Leu Val Pro Gln Ala Ile Ala Tyr Ser Leu Leu Ala Gly Leu
 85 90 95
 Gln Pro Ile Tyr Ser Leu Tyr Thr Ser Phe Phe Ala Asn Leu Ile Tyr
 100 105 110
 Phe Leu Met Gly Thr Ser Arg His Val Asn Val Gly Ile Phe Ser Leu
 115 120 125
 Leu Cys Leu Met Val Gly Gln Val Val Asp Arg Glu Leu Gln Leu Ala
 130 135 140
 Gly Phe Asp Pro Ser Gln Asp Ser Leu Gly Pro Lys Asn Asn Asp Ser
 145 150 155 160
 Thr Leu Asn Asn Ser Ala Thr Thr Leu Ile Ile Gly Leu Gln Asp Cys
 165 170 175
 Arg Arg Asp Cys Tyr Ala Ile Arg Val Ala Thr Ala Leu Thr Leu Met
 180 185 190
 Ala Gly Leu Tyr Gln Val Leu Met Gly Ile Leu Arg Leu Gly Phe Val
 195 200 205
 Ser Thr Tyr Leu Ser Gln Pro Leu Leu Asp Gly Phe Ala Met Gly Ala
 210 215 220
 Ser Val Thr Ile Leu Thr Ser Gln Ala Lys His Met Leu Gly Val Gln
 225 230 235 240
 Ile Pro Arg His Gln Gly Leu Gly Met Val Val His Thr Trp Leu Ser
 245 250 255
 Leu Leu Gln Asn Val Gly Gln Ala Asn Ile Cys Asp Val Val Thr Ser
 260 265 270
 Ala Leu Cys Leu Gly Val Leu Leu Ala Ala Lys Glu Leu Ser Asp Arg
 275 280 285
 Tyr Arg His Arg Leu Lys Val Pro Ile Pro Thr Glu Leu Phe Val Ile
 290 295 300
 Val Val Ala Thr Ile Val Ser His Phe Gly Gln Leu His Thr Arg Phe
 305 310 315 320
 Asp Ser Arg Val Ala Gly Asn Ile Pro Thr Gly Phe Val Ala Pro Gln
 325 330 335
 Val Pro Asp Pro Lys Ile Met Trp Arg Val Ala Leu Asp Ala Met Ser
 340 345 350
 Leu Ala Leu Val Gly Ser Ala Phe Ser Ile Ser Leu Ala Glu Met Phe
 355 360 365
 Ala Arg Ser His Gly Tyr Ser Val Ser Ala Asn Gln Glu Leu Leu Ala
 370 375 380
 Val Gly Cys Cys Asn Val Leu Pro Ala Phe Phe His Cys Phe Ala Thr
 385 390 395 400
 Ser Ala Ala Leu Ser Lys Thr Leu Val Lys Ile Ala Thr Gly Cys Gln
 405 410 415

Thr Gln Leu Ser Ser Val Val Ser Ala Ala Val Val Leu Leu Val Leu
 420 425 430
 Leu Val Leu Ala Pro Leu Phe His Asp Leu Gln Arg Cys Val Leu Ala
 435 440 445
 Cys Ile Ile Val Val Ser Leu Arg Gly Ala Leu Arg Lys Val Lys Asp
 450 455 460
 Leu Pro Gln Leu Trp Arg Leu Ser Pro Ala Asp Ala Leu Val Trp Val
 465 470 475 480
 Ala Thr Ala Ala Thr Cys Val Leu Val Ser Thr Glu Ala Gly Leu Leu
 485 490 495
 Ala Gly Val Phe Phe Ser Leu Leu Ser Leu Ala Gly Arg Thr Gln Arg
 500 505 510
 Pro Arg Ala Ala Leu Leu Ala Arg Ile Gly Asp Ser Thr Phe Tyr Glu
 515 520 525
 Asp Ala Ala Glu Phe Glu Gly Leu Leu Pro Pro Pro Glu Val Arg Val
 530 535 540
 Phe Arg Phe Thr Gly Pro Leu Tyr Tyr Ala Asn Lys Asp Phe Phe Leu
 545 550 555 560
 Arg Ser Leu Tyr Arg Leu Thr Gly Leu Asp Ala Gly His Ser Ala Thr
 565 570 575
 Arg Lys Asp Gln Gly Pro Glu Val Gly Val Ser Asn Arg Ser Leu Val
 580 585 590
 Asp Gly Lys Asp Leu Gly Ser Val Ser Ser Gly Ala Gly Leu Val Val
 595 600 605
 Pro Leu Ala Phe Gly Phe His Thr Val Val Ile Asp Cys Ala Pro Leu
 610 615 620
 Leu Phe Leu Asp Val Ala Gly Met Ala Thr Leu Lys Asp Leu Arg Arg
 625 630 635 640
 Asp Tyr Arg Ala Leu Asp Ile Thr Leu Leu Leu Ala Cys Cys Ser Pro
 645 650 655
 Ser Val Arg Asp Thr Leu Arg Lys Gly Gly Phe Leu Gly Glu Glu Gln
 660 665 670
 Gly Ala Glu Asn Glu Leu Leu Phe Pro Ser Val His Ser Ala Val Glu
 675 680 685
 Ala Ala Tyr Ala Arg Arg Glu Glu Leu Leu Ala Ala Asp Ser Ala Leu
 690 695 700

<210> 11

<211> 3367

<212> DNA

<213> Mus musculus

<400> 11

gtcttcgagg aggacgcgcc gcgggagccc gtgtacggcg gcccgagcgg ttaaggcgta
 aaatttctgc tttaaagaca tcatcttcag gattccatca attccaggac atgtgctgta
 attcctgtct ttgctcctcc gtaagtgatg cgtggctgtc ttcagaagtg ccctctgagc
 agcagtgatt ggaagtgaac catctgtctc ctgaaatgtc ttcagaaaat aaagagcagc
 atgacctctc accgaggac ttacctgaag aagcctttgg tttcccatct gagctccccc

tggagactca aagaagggtca ggcactgact tgaggcagtc tgagaccggt catggccgga
gagctttccg taggatccac atggagctcc gtgagaaacc agacacagac atcaaacagt
ttgtcatcag agagctccag aagagttgcc agtgcagcgc agccaaagtc agagacgggg
cttttgatgt ctttcctggt ttgcgggtggc tcccaaaata tgacctgaag aaaaacattt
taggtgatgt gatgtctggc ctgattgtgg gtatcctggt ggtgccccag tccattgctt
actccctgct ggctggccag gacccatat atggtctata tacatcattt tttgccagca
ttatttatgt cctgtttggt acatcccgcc acatctctgt gggcattttt ggaatactgt
gccttatgat tgggtagggt gttgaccgag aactacataa agcctgccct gacactgatg
ctacgtcatc ttcgatagca gtgttttcaa gtggatgtgt ggttgtaaac catacattag
acggactctg tgataaaagc tgctatgcaa ttaaaattgg cagcactgtg accttcatgg
ctggagtta tcaggtagca atgggcttct ttcaagtggg ctttgtctct gtctacctct
ccgacgcctt gctgagcggg tttgtcactg gcgcctcctt caccatcctc acgtctcagg
ccaagtacct ccttgggctg agccttcctc ggagtcattg tgtcggctca gtcattacta
cctggatcca catcttcaga aacatccgta acaccaacat ctgtgatctc atcaccagcc
ttttatgtct tctggctctc gtgccatcca aagaactcaa tgagcacttc aaggacaagc
tcaaggctcc aattccggtc gagctcattg tcgttgtggc ggccacattg gcttctcatt
ttggaaaact aaatgggaat tacaattcca gtattgctgg acacattccc actgggttta
tgccacccaa agcaccagac tggagcctca ttcctaattg ggctgtagat gcaatagcta
tttctatcat tggttttgct atcactgtat cactttctga gatgtttgcc aagaaacatg
gctacacggg caaagcaaac caagaaatgt atgccattgg cttttgcaat atcatacctt
ccttcttcca ctgcataact actagtgcag ctcttgcaaa gacattgggt aaagagtcaa
caggctgcca gacgcagctg tcagctatag tgacagccct tgccttttg ttggtccttc
tggtaatagc tcctttatct tattcccttc aaaaatgtgt ccttgggtgt atcactattg
taaactctccg gggcgacatt ctgaaattta gagacctgcc aaagatgtgg aggctaagca
gaatggatag agttatctgg tttgtgacta tgctgtcctc cgctctgtta agcactgaaa
taggcctgct ggttgggggt tgtttttcaa tgttctgtgt gatcctccgt actcagaagc
caaagaattc actgcttgggt ttagaagaag aatctgaaac ctttgaatcc atttccactt
acaagaacct tcggagcaag tccggcatca aggttttccg cttcatagcc cctctctact
acataaacia agagtgtctt aaatcagctt tgtacaagaa agctcttaac ccagtcttgg
taaaggcagc ttggaaaaag gcagcaaaga gaaaactcaa agaagaaatg gtgaccttct
gtgggggacc ggatgaagtt tcaatgcagc tttcccatga tcccttggag gtgcacacta
tcgtgatcga ctgtagtgcc atacagtttt tagacacagc aggaatccac aactgaaag
aagttcgccg ggattatgaa gccgttggga tccaggtttt actggcgag tgcaatcctt
ctgtgagggg ttccttggcc agaggagaat attgcaaaaa ggaagaggaa acccttctct

tctacagtct gtctgaagca gtagcctttg cagaagactc tcagaatcag aaaggggtgt
 gtgttgtaa cggctctgagt ctctctggtg actgagaaag ttaatctgca tcttcctggt
 aactgggcaa gttaataaaa ggaagaatag tgtcttgccct gtttcaatgt ggaacgtttt
 ctactgtgaa aggagaaagc catgcacact tgaatatagtt ctttgaagct agcctttcga
 tagtctcatg agcttttgggt tgggtagaat caaaaagaag taaatgttat ggcttccggc
 ttatgcagat agcattcttg gggtagacagta taaatggaat ggaactgtaa agcagcccc
 aacttaagtg ccttacttta ggaactatat atctgaactc tgtccttcag gatgcagagc
 gaggtaacgc cgggctttgc ctgacacaca ctgcagctct agagagggga cgaagaaagg
 aggcagcgct gctggtagac aggcctggaaa agcacaaggg cctacggacc ctgctgctgt
 gtctctgtta ggattttgct ccccaaacag taagatctct tgctgatagt tagaaatcat
 cttttttcct ttccttcatg caagaaccgt gccatagtct cataagagaa tctgacctca
 caaccagcct gatactattg tatagaaccc atattgtaaa tatctaagt cttaagtctt
 ccctttttat ttagaataag tgggtaaaga aagagtttta aaaccagaat ggcagtggaa
 gtctttgtct ctcttcatct ctgtctttgt ctttgagaac ttgtctgctg ttacgcctgt
 tctcaccttt gacttattct tgttcccccc ccccccccc cgggaaatcct tgcctgagttg
 gcatctctga acaccagtgg cagagttgtc agagaaagca gagtattggc tcagcagctt
 cctaacagca ctgtgaatgg gcttgtggtg cacattcaag gagagatcgt aaaaaaaaaa
 aaaagaa

<210> 12
 <211> 739
 <212> PRT
 <213> Mus musculus
 <400> 12

Met	Ser	Ser	Glu	Asn	Lys	Glu	Gln	His	Asp	Leu	Ser	Pro	Arg	Asp	Leu
1				5					10					15	
Pro	Glu	Glu	Ala	Phe	Gly	Phe	Pro	Ser	Glu	Leu	Pro	Leu	Glu	Thr	Gln
			20					25					30		
Arg	Arg	Ser	Gly	Thr	Asp	Leu	Arg	Gln	Ser	Glu	Thr	Gly	His	Gly	Arg
		35					40					45			
Arg	Ala	Phe	Arg	Arg	Ile	His	Met	Glu	Leu	Arg	Glu	Lys	Pro	Asp	Thr
	50				55						60				
Asp	Ile	Lys	Gln	Phe	Val	Ile	Arg	Glu	Leu	Gln	Lys	Ser	Cys	Gln	Cys
65					70					75				80	
Ser	Ala	Ala	Lys	Val	Arg	Asp	Gly	Ala	Phe	Asp	Phe	Phe	Pro	Val	Leu
			85						90					95	
Arg	Trp	Leu	Pro	Lys	Tyr	Asp	Leu	Lys	Lys	Asn	Ile	Leu	Gly	Asp	Val
			100					105					110		
Met	Ser	Gly	Leu	Ile	Val	Gly	Ile	Leu	Leu	Val	Pro	Gln	Ser	Ile	Ala
		115					120					125			

Tyr Ser Leu Leu Ala Gly Gln Glu Pro Ile Tyr Gly Leu Tyr Thr Ser
 130 135 140
 Phe Phe Ala Ser Ile Ile Tyr Phe Leu Phe Gly Thr Ser Arg His Ile
 145 150 155 160
 Ser Val Gly Ile Phe Gly Ile Leu Cys Leu Met Ile Gly Glu Val Val
 165 170 175
 Asp Arg Glu Leu His Lys Ala Cys Pro Asp Thr Asp Ala Thr Ser Ser
 180 185 190
 Ser Ile Ala Val Phe Ser Ser Gly Cys Val Val Val Asn His Thr Leu
 195 200 205
 Asp Gly Leu Cys Asp Lys Ser Cys Tyr Ala Ile Lys Ile Gly Ser Thr
 210 215 220
 Val Thr Phe Met Ala Gly Val Tyr Gln Val Ala Met Gly Phe Phe Gln
 225 230 235 240
 Val Gly Phe Val Ser Val Tyr Leu Ser Asp Ala Leu Leu Ser Gly Phe
 245 250 255
 Val Thr Gly Ala Ser Phe Thr Ile Leu Thr Ser Gln Ala Lys Tyr Leu
 260 265 270
 Leu Gly Leu Ser Leu Pro Arg Ser His Gly Val Gly Ser Val Ile Thr
 275 280 285
 Thr Trp Ile His Ile Phe Arg Asn Ile Arg Asn Thr Asn Ile Cys Asp
 290 295 300
 Leu Ile Thr Ser Leu Leu Cys Leu Leu Val Leu Val Pro Ser Lys Glu
 305 310 315 320
 Leu Asn Glu His Phe Lys Asp Lys Leu Lys Ala Pro Ile Pro Val Glu
 325 330 335
 Leu Ile Val Val Val Ala Ala Thr Leu Ala Ser His Phe Gly Lys Leu
 340 345 350
 Asn Gly Asn Tyr Asn Ser Ser Ile Ala Gly His Ile Pro Thr Gly Phe
 355 360 365
 Met Pro Pro Lys Ala Pro Asp Trp Ser Leu Ile Pro Asn Val Ala Val
 370 375 380
 Asp Ala Ile Ala Ile Ser Ile Ile Gly Phe Ala Ile Thr Val Ser Leu
 385 390 395 400
 Ser Glu Met Phe Ala Lys Lys His Gly Tyr Thr Val Lys Ala Asn Gln
 405 410 415
 Glu Met Tyr Ala Ile Gly Phe Cys Asn Ile Ile Pro Ser Phe Phe His
 420 425 430
 Cys Ile Thr Thr Ser Ala Ala Leu Ala Lys Thr Leu Val Lys Glu Ser
 435 440 445
 Thr Gly Cys Gln Thr Gln Leu Ser Ala Ile Val Thr Ala Leu Val Leu
 450 455 460
 Leu Leu Val Leu Leu Val Ile Ala Pro Leu Phe Tyr Ser Leu Gln Lys
 465 470 475 480
 Cys Val Leu Gly Val Ile Thr Ile Val Asn Leu Arg Gly Ala Leu Leu
 485 490 495

Lys Phe Arg Asp Leu Pro Lys Met Trp Arg Leu Ser Arg Met Asp Thr
 500 505 510
 Val Ile Trp Phe Val Thr Met Leu Ser Ser Ala Leu Leu Ser Thr Glu
 515 520 525
 Ile Gly Leu Leu Val Gly Val Cys Phe Ser Met Phe Cys Val Ile Leu
 530 535 540
 Arg Thr Gln Lys Pro Lys Asn Ser Leu Leu Gly Leu Glu Glu Glu Ser
 545 550 555 560
 Glu Thr Phe Glu Ser Ile Ser Thr Tyr Lys Asn Leu Arg Ser Lys Ser
 565 570 575
 Gly Ile Lys Val Phe Arg Phe Ile Ala Pro Leu Tyr Tyr Ile Asn Lys
 580 585 590
 Glu Cys Phe Lys Ser Ala Leu Tyr Lys Lys Ala Leu Asn Pro Val Leu
 595 600 605
 Val Lys Ala Ala Trp Lys Lys Ala Ala Lys Arg Lys Leu Lys Glu Glu
 610 615 620
 Met Val Thr Phe Arg Gly Asp Pro Asp Glu Val Ser Met Gln Leu Ser
 625 630 635 640
 His Asp Pro Leu Glu Val His Thr Ile Val Ile Asp Cys Ser Ala Ile
 645 650 655
 Gln Phe Leu Asp Thr Ala Gly Ile His Thr Leu Lys Glu Val Arg Arg
 660 665 670
 Asp Tyr Glu Ala Val Gly Ile Gln Val Leu Leu Ala Gln Cys Asn Pro
 675 680 685
 Ser Val Arg Asp Ser Leu Ala Arg Gly Glu Tyr Cys Lys Lys Glu Glu
 690 695 700
 Glu Thr Leu Leu Phe Tyr Ser Leu Ser Glu Ala Val Ala Phe Ala Glu
 705 710 715 720
 Asp Ser Gln Asn Gln Lys Gly Val Cys Val Val Asn Gly Leu Ser Leu
 725 730 735
 Ser Gly Asp

<210> 13
 <211> 1611
 <212> DNA
 <213> Mus musculus
 <400> 13
 agaaaacact tgttcctctt tctgtctcag ctgttgagaa tactcaccca ggatgacctt
 tgtaggactc tgagctctcc tccctccaaa atagccagtt attttttagcc catttcatgg
 gagatttgga ccagggtccc atttctttct gaaatatggc ctctcacctt gtgactggag
 cctgaagttg gagcgaggga gctgcgccaa gagaagccac tttcctggtc taggcagtca
 tatgagggtt tccttaatat ccagaggctg acatttgtgg ccctgcccac tagtcacccc
 aaacctaggc gttcccaactt cagttcctgc ttaccacccc acactctggc ctttactggt
 cttttctcac ttggatcagg ccagagcttc cagacctgga aaggatcctg agtgctccat
 ttccagtcta ggcagccagg tgtgaaagtg aaaggggggg gggggcctta gaagccaccc

atgggtgacaa atacctttga tctcttcttt aatcccagca ctactaggc agaggcaggt
ggatctctgt agacaagtct ggtctacaga gagttccagg acagccaagg ctaaacagag
aaaacttgtc tggaaaaaaa gaaatggagg tggggtgggg ctggtcttga ggaccactgt
gccaggtctc agaaggaaaa atctgagggg gatactcaca gcttggtggt ccctgagaga
ccctacaggc ctatagctcc cacagttgag gctggggccc ctggttgac acctaggcat
ccagatcggc caagaatgtc tcctctgcat aaagtgggga ccttctacaa agcatacaat
taggtccagc cacttaaggg cacagaggca taacattggc caagcgtagc gctgggcctt
cgttccagtc ctccagtctc agcagaatgc tccagctccc agcagggttaa caagaatcgc
aggcagggac agaagctagg ccgacgggaa ggaaaggggt aaaattttat tctccgggct
cgccccgccc agagagtatg acttggaatc cacccccaga attctgattg gtctgatctt
gcacatccta gcggtggagc ttgcggccgg ccaagtcttg ggcctggcgc caccttctag
ccggtagtgg cctcctgggg gagctgtttg aaaagcggta cacgagttac cctctgaggg
ccatgggact tcccgatggg tccggtgagt tgcagggcgc tgcccaaatt ccgcgtgccc
gcgaagcgct agtagttctg tgactcccg cctgggtcaa ttcaggaagg gaacctccaa
gtccccgaca ggcatttccc gtctgcggag ccttagttta ccgccttgcc gattttccga
aggaggttat ccataacag cgagggatgg gggcgggctc tggcgcgacc ccagctcttg
agggttgtac tgaacgtccc tggagtgcta ataagggcgc tgcaggaag ttgctgctta
ccgaggagtc ctggcacggg aggtgtgcca gctgggcgcg ttgggactgg gagagaaacc
gctgcaagac aggtctctagc caggcgggtg accagccgcg gcctgagtcg g

<210> 14
<211> 12
<212> DNA
<213> Mus musculus
<400> 14
ggtcgggtga gt

<210> 15
<211> 12
<212> DNA
<213> Mus musculus
<400> 15
aagaagactt ga

<210> 16
<211> 12
<212> DNA
<213> Mus musculus
<400> 16
tcccaggtga gt

<210> 17
<211> 12
<212> DNA
<213> Mus musculus

<400> 17
ctctagacca ag

<210> 18
<211> 12
<212> DNA
<213> Mus musculus
<400> 18
gttccggtaa tg

<210> 19
<211> 12
<212> DNA
<213> Mus musculus
<400> 19
tcctagatgc tc

<210> 20
<211> 12
<212> DNA
<213> Mus musculus
<400> 20
ctcagggatga gc

<210> 21
<211> 12
<212> DNA
<213> Mus musculus
<400> 21
ctgcaggctt gg

<210> 22
<211> 12
<212> DNA
<213> Mus musculus
<400> 22
ctgtgggtaa gt

<210> 23
<211> 12
<212> DNA
<213> Mus musculus
<400> 23
ctgaagggac ct

<210> 24
<211> 12
<212> DNA
<213> Mus musculus
<400> 24
ttccaggtag ga

<210> 25
<211> 12
<212> DNA
<213> Mus musculus
<400> 25
caacaggtag gg

<210> 26
<211> 12
<212> DNA
<213> Mus musculus
<400> 26
atctatgtga gt

<210> 27
<211> 12
<212> DNA
<213> Mus musculus
<400> 27
ccttagacag tg

<210> 28
<211> 12
<212> DNA
<213> Mus musculus
<400> 28
ctcacggttc gg

<210> 29
<211> 12
<212> DNA
<213> Mus musculus
<400> 29
ccacagctca tt

<210> 30
<211> 12
<212> DNA
<213> Mus musculus
<400> 30
cacagggtaa gc

<210> 31
<211> 12
<212> DNA
<213> Mus musculus
<400> 31
tcccaggctc at

<210> 32
<211> 12
<212> DNA
<213> Mus musculus
<400> 32
aaccaggtct gt

<210> 33
<211> 12
<212> DNA
<213> Mus musculus
<400> 33
ccacaggagc tg

<210> 34
<211> 12
<212> DNA
<213> Mus musculus

<400> 34
acacaggtag gc

<210> 35
<211> 12
<212> DNA
<213> Mus musculus
<400> 35
ctgcaggttg ct

<210> 36
<211> 12
<212> DNA
<213> Mus musculus
<400> 36
cccaaggtga gc

<210> 37
<211> 12
<212> DNA
<213> Mus musculus
<400> 37
ccccaggccg tc

<210> 38
<211> 12
<212> DNA
<213> Mus musculus
<400> 38
ctcctggtga ga

<210> 39
<211> 12
<212> DNA
<213> Mus musculus
<400> 39
tatcagctaa tc

<210> 40
<211> 12
<212> DNA
<213> Mus musculus
<400> 40
gcagctgtga gt

<210> 41
<211> 12
<212> DNA
<213> Mus musculus
<400> 41
cctcaggccc ca

<210> 42
<211> 12
<212> DNA
<213> Mus musculus
<400> 42
tctggggtga gt

<210> 43
<211> 12
<212> DNA
<213> Mus musculus
<400> 43
ctccaggcca ag

<210> 44
<211> 12
<212> DNA
<213> Mus musculus
<400> 44
gagaaggtga gg

<210> 45
<211> 12
<212> DNA
<213> Mus musculus
<400> 45
ctctagtgcg gt

<210> 46
<211> 12
<212> DNA
<213> Mus musculus
<400> 46
aaacaggtgg gg

<210> 47
<211> 12
<212> DNA
<213> Mus musculus
<400> 47
tcttaggatg ct

<210> 48
<211> 12
<212> DNA
<213> Mus musculus
<400> 48
gccaaagtgga gg

<210> 49
<211> 12
<212> DNA
<213> Mus musculus
<400> 49
ctgcaggtgc ac

<210> 50
<211> 12
<212> DNA
<213> Mus musculus
<400> 50
aagaatgtaa gg

<210> 51
<211> 12
<212> DNA
<213> Mus musculus

<400> 51
ctgcagattt tc

<210> 52
<211> 12
<212> DNA
<213> Mus musculus
<400> 52
gttacagtgc gt

<210> 53
<211> 12
<212> DNA
<213> Mus musculus
<400> 53
ccacaggtcc tg

<210> 54
<211> 12
<212> DNA
<213> Mus musculus
<400> 54
gttttggtaa gc

<210> 55
<211> 12
<212> DNA
<213> Mus musculus
<400> 55
acgcaggcca cc

<210> 56
<211> 12
<212> DNA
<213> Mus musculus
<400> 56
ccccaggtaa ga

<210> 57
<211> 12
<212> DNA
<213> Mus musculus
<400> 57
ggctaggaca gc

<210> 58
<211> 12
<212> DNA
<213> Mus musculus
<400> 58
tgcctggtga ga

<210> 59
<211> 12
<212> DNA
<213> Mus musculus
<400> 59
ttgcagataa gc

<210> 60
<211> 12
<212> DNA
<213> Mus musculus
<400> 60
tatcaggtaa ag

<210> 61
<211> 12
<212> DNA
<213> Mus musculus
<400> 61
ctgcaggccc tc

<210> 62
<211> 34
<212> DNA
<213> Homo sapiens
<400> 62
acacaggcac tgctgtctgc aacacaagca atgg

<210> 63
<211> 38
<212> DNA
<213> Homo sapiens
<400> 63
aggatgtagc atgttcagag tctggtgacc gaaacagg

<210> 64
<211> 21
<212> DNA
<213> Homo sapiens
<400> 64
tacacgagtt accctctgag g

<210> 65
<211> 21
<212> DNA
<213> Homo sapiens
<400> 65
tacagaccaa acataggagg c

<210> 66
<211> 19
<212> DNA
<213> Homo sapiens
<400> 66
acaacttgcg agccatggg

<210> 67
<211> 21
<212> DNA
<213> Homo sapiens
<400> 67
tggttgagca gaagggcata g

<210> 68
<211> 6
<212> PRT
<213> Homo sapiens

<400> 68

Thr Gln Ala Leu Leu Ser
1 5

<210> 69

<211> 8

<212> PRT

<213> Mus musculus

<400> 69

Gly Thr Ser Arg His Ile Ser Val
1 5

<210> 70

<211> 98

<212> PRT

<213> Mus musculus

<400> 70

Gly Asp Val Met Ser Gly Leu Val Ile Gly Ile Ile Leu Val Pro Gln
1 5 10 15

Ala Ile Ala Tyr Ser Leu Leu Ala Gly Leu Gln Pro Ile Tyr Ser Leu
20 25 30

Tyr Thr Ser Phe Phe Ala Asn Leu Ile Tyr Phe Leu Asn Gly Thr Ser
35 40 45

Arg His Val Asn Val Gly Ile Phe Ser Leu Leu Cys Leu Met Val Gly
50 55 60

Gln Val Val Asp Arg Glu Leu Gln Leu Ala Gly Phe Asp Pro Ser Gln
65 70 75 80

Asp Ser Leu Gly Pro Lys Asn Asn Asp Ser Thr Leu Asn Asn Ser Ala
85 90 95

Thr Thr

<210> 71

<211> 98

<212> PRT

<213> Mus musculus

<400> 71

Gly Asp Val Met Ser Gly Leu Ile Val Gly Ile Leu Leu Val Pro Gln
1 5 10 15

Ser Ile Ala Tyr Ser Leu Leu Ala Gly Gln Glu Pro Ile Tyr Gly Leu
20 25 30

Tyr Thr Ser Phe Phe Ala Ser Ile Ile Tyr Phe Leu Phe Gly Thr Ser
35 40 45

Arg His Ile Ser Val Gly Ile Phe Gly Ile Leu Cys Leu Met Ile Gly
50 55 60

Glu Val Val Asp Arg Glu Leu His Lys Ala Cys Pro Asp Thr Asp Ala
65 70 75 80

Thr Ser Ser Ser Ile Ala Val Phe Ser Ser Gly Cys Val Val Val Asn
85 90 95

His Thr

<210> 72
 <211> 91
 <212> PRT
 <213> Mus musculus
 <400> 72

Ser Asp Ile Val Ser Gly Ile Ser Thr Gly Leu Val Ala Val Leu Gln
 1 5 10 15
 Gly Leu Ala Phe Ala Leu Leu Val Asn Ile Pro Pro Ala Tyr Gly Leu
 20 25 30
 Tyr Ala Ala Phe Phe Pro Val Ile Thr Tyr Phe Phe Leu Gly Thr Ser
 35 40 45
 Arg His Ile Ser Val Gly Pro Phe Pro Val Leu Ser Met Met Val Gly
 50 55 60
 Val Val Val Thr Arg Val Val Ser Asp Pro Asn Ala Ser Ser Glu Leu
 65 70 75 80
 Ser Ser Ser Ser Thr Glu Asn Asp Ser Phe Ile
 85 90

<210> 73
 <211> 97
 <212> PRT
 <213> Mus musculus
 <400> 73

Ser Asp Ile Ile Ser Gly Val Ser Thr Gly Leu Val Gly Thr Leu Gln
 1 5 10 15
 Gly Met Ala Tyr Ala Leu Leu Ala Ala Val Pro Val Gln Phe Gly Leu
 20 25 30
 Tyr Ser Ala Phe Phe Pro Ile Leu Thr Tyr Phe Val Phe Gly Thr Ser
 35 40 45
 Arg His Ile Ser Val Gly Pro Phe Pro Val Val Ser Leu Met Val Gly
 50 55 60
 Ser Val Val Leu Ser Met Ala Pro Asp Asp His Phe Leu Val Pro Ser
 65 70 75 80
 Gly Asn Gly Ser Ala Leu Asn Ser Thr Thr Leu Asp Thr Gly Thr Arg
 85 90 95

Asp

<210> 74
 <211> 91
 <212> PRT
 <213> Mus musculus
 <400> 74

Gly Asp Leu Val Ser Gly Ile Ser Thr Gly Val Leu Gln Leu Pro Gln
 1 5 10 15
 Gly Leu Ala Phe Ala Met Leu Ala Ala Val Pro Pro Val Phe Gly Leu
 20 25 30
 Tyr Ser Ser Phe Tyr Pro Val Ile Met Tyr Cys Phe Phe Gly Thr Ser
 35 40 45
 Arg His Ile Ser Ile Gly Pro Phe Ala Val Ile Ser Leu Met Ile Gly
 50 55 60

Gly Val Ala Val Arg Leu Val Pro Asp Asp Ile Val Ile Pro Gly Gly
65 70 75 80

Val Asn Ala Thr Asn Gly Thr Glu Ala Arg Asp
85 90

<210> 75
<211> 85
<212> PRT
<213> Mus musculus
<400> 75

Gly Asp Leu Leu Ser Gly Leu Ser Val Ala Ile Met Gln Leu Pro Gln
1 5 10 15

Gly Leu Ala Tyr Ala Leu Leu Ala Gly Leu Pro Pro Met Phe Gly Leu
20 25 30

Tyr Ser Ser Phe Tyr Pro Val Phe Ile Tyr Phe Leu Phe Gly Thr Ser
35 40 45

Arg His Ile Ser Val Gly Thr Phe Ala Val Met Ser Val Met Val Gly
50 55 60

Ser Val Thr Glu Ser Leu Thr Ala Asp Lys Ala Phe Val Gln Gly Leu
65 70 75 80

Asn Ala Thr Ala Asp
85

<210> 76
<211> 93
<212> PRT
<213> Mus musculus
<400> 76

Pro Asp Thr Val Ser Gly Ile Met Leu Ala Val Gln Gln Val Ala Gln
1 5 10 15

Gly Leu Ser Phe Ala Met Leu Ser Ser Val His Pro Val Phe Gly Leu
20 25 30

Tyr Gly Ser Leu Phe Pro Ala Ile Ile Tyr Ala Ile Phe Gly Met Gly
35 40 45

Arg His Val Ala Thr Gly Thr Phe Ala Leu Thr Ser Leu Ile Ser Ala
50 55 60

Asn Ala Val Glu Arg Leu Val Pro Gln Ser Ser Arg Asn Leu Thr Thr
65 70 75 80

Gln Ser Asn Ser Ser Val Leu Gly Leu Ser Glu Phe Glu
85 90

<210> 77
<211> 97
<212> PRT
<213> Mus musculus
<400> 77

Gly Asp Leu Leu Ala Gly Leu Ser Val Gly Leu Ala Gln Val Pro Gln
1 5 10 15

Gly Leu Ile Leu Ser Leu Leu Thr Arg Gln Leu Ile Pro Pro Leu Asn
20 25 30

Val Thr Tyr Ala Ala Phe Cys Ser Ser Val Ile Tyr Val Ile Phe Gly
 35 40 45
 Ser Cys His Gln Met Ser Ile Gly Pro Phe Phe Leu Val Ser Ala Leu
 50 55 60
 Met Ile Asn Val Leu Lys Asp Arg Pro Phe Asn Asn Gly His Leu Ile
 65 70 75 80
 Leu Gly Thr Phe Val Lys Asp Asp Phe Ser Val Pro Thr Phe Tyr Leu
 85 90 95
 Ser

<210> 78
 <211> 94
 <212> PRT
 <213> Mus musculus
 <400> 78

Pro Asp Leu Leu Gly Gly Leu Ser Gly Gly Cys Ile Gln Val Pro Gln
 1 5 10 15
 Gly Met Ala Phe Ala Leu Leu Ala Asn Leu Pro Ala Val Asn Gly Leu
 20 25 30
 Tyr Ser Ser Phe Phe Pro Leu Leu Thr Tyr Phe Phe Leu Gly Gly Ile
 35 40 45
 His Gln Met Val Pro Gly Thr Phe Ala Val Ile Ser Ile Leu Val Gly
 50 55 60
 Asn Ile Cys Leu Gln Leu Ala Pro Glu Ser Lys Phe Gln Ile Phe Asn
 65 70 75 80
 Asn Val Thr Asn Glu Thr Tyr Val Asp Thr Ala Ala Met Glu
 85 90

<210> 79
 <211> 78
 <212> PRT
 <213> Mus musculus
 <400> 79

Leu Asp Phe Ile Ala Gly Leu Ser Val Gly Leu Thr Val Ile Pro Gln
 1 5 10 15
 Ala Leu Ala Tyr Ala Glu Val Ala Gly Leu Pro Pro Gln Tyr Gly Leu
 20 25 30
 Tyr Ser Ala Phe Met Gly Cys Phe Val Tyr Phe Phe Leu Gly Thr Ser
 35 40 45
 Arg Asp Val Thr Leu Gly Pro Thr Ala Ile Met Ser Leu Leu Val Ser
 50 55 60
 Phe Tyr Thr Phe Arg Glu Pro Ala Tyr Ala Val Leu Leu Ala
 65 70 75

<210> 80
 <211> 3635
 <212> DNA
 <213> Xenopus laevis
 <400> 80
 gcacgcgggg cagcaggctg ggaactgtaa ttttttcagg aagcatagat ggcaacagca
 agaatggata tccccagccc tggctacaac caatacctgg tgcacagatc agtctactct

gaaccaacat tccaagaaga aaatgaaaga aaagagcctg ttcggaaaac tctccaggac
aggggtgaaaa agaattgcag ctgtacatca aaaaaggcctt tgtttatagt caagaagttt
ctccctattc tgaattgggt acccaaatac agatggaaaag aatgggtttt aagtgcctg
atctctggag tcagcacagg tcttgttgggt accttgcaag gcctggcatt tgcattgctt
gctgcagtcc ctgttgata tggcctctac tcttctttt tccctatctt gacttatttt
ttcctgggaa catcaaaaaca ctttctgtg ggaccattcc cagtggtcag tttgatgggtg
ggatcagttg ttctgtctat tgctccagat gaaaaatttg caatattagg caactctaca
ggactgaaca aaacaataat agacacagta gcaagagatg cagccagagt tgccgtttca
ggaacactca gctttctaatt tgggaattata cagcttgcaac ttggcgtatt tcaaattggc
tttattatca gatatttggc agatccatta gttggtgggt ttactacagc tgcagccttc
caagtgtttg tttcacaatt caaactagtg ctcaatgtcc ccacaaagaa ctacaacgga
gtactctcta tcatatatac aataatagat atctttacca acattgcgaa aaccaacatt
gctgatctga ttgctggact tctaacattt gttgtttgctg ttgtggtgaa agaaataaat
gatcgataca aacgcattctt tcgggtacct attcctatag aagtaattgt gaccatagta
gctacagggg tttcatatgg cgtcaatctg gaaaagaaat ataatgcagg gattgtgaag
acaattccaa ctggattcat accacctatg acaccagacg tgagcctctt ctacaaaata
ggtagttcag cttttccat cgggtattgt gcctatgctg tagctgtgtc tgtgggaaaa
gtttatgcta caaagcacia ctatgaagtt gatggaaatc aggagttcat tgcctttgga
ataagcaatc tattcgggtg agtattttct tgcttttgtg ccaccacggc cctatcacgt
acagctatcc aggaaagcac tggaggcaaa acacagattg ctgggattat ctgagctggg
attgtgttaa ttgcaattgt ggcacttggc aagctccttg aacccttca aaagtcagtg
ctagcggcca ttgtcattgc caatctgaag gggatgtttt ggcaagtttt tgatgtacct
cgcttatgga aacagaacaa atgggactca gttatctggg tttttacctg cattgcatca
atccttctgg gacttgattt aggactgcta gctggcttgt tgtttggatt agtgactatt
attttacgtg ttcagttccc ttcattgtga gctcttggta gtgttcttgg cacagacatt
tacaaaaatg tcaaaagaata caaaaatctc atagagccag aaggagttaa aatcattcgc
tatacaagtg gtatgtttta tggaaatata gacgggttta agaatgccat caaatcaatt
gttgggtttg atgcggtgaa agtttataac aagagaacaa aagcactgag gaaaaataca
aagcttatta aaaaaggaca actaagatca acaaagaatg gcattattag cagcacagga
gcagataatg aaggttatga gcctgatgat gatcccgagg acccagaaca agaaaaataat
gaagcagttc aaacaaaaga agtagagatc caagtagact ggaactcaga acttccaata
aaagtatctg tgcccaaagt ctccattcac agcatcattt ttgattttgg gcaaatccac
ttcattgatg tggttgcagt gagatctctt aaagtgatat ttaaagaatt taagagaatt
gatgtagagc catacattgc agcatatgaa gatgggtgtt tacaaaaaat ggaaaaatgc

tttttctttg atgaggtgat caaacgagac atcttctttt tgaccgtcca tgatgctgtg
 ctgcatatag agaacctgag aaagtcttat gatggctatg atcctcttct tgaaaagatt
 tcactcatgc aagaatctaa ggaaccattg gagttcacca caactgaccc aacagaccaa
 gaactggatg cccaggaagg ggctctccga tcactggcac actgaagaaa ggcattctgta
 acactcatta gggacagtat catccttttg gttcaataac gagacatttg ctgtttcatt
 aacatctact aataccatgc tatgcatatg ataaaaatgt tatgaatgtt tatgaattat
 atgatgggca actcctcaaa aaccttccaa acagcatttt aaatgtgtaa aacagataga
 caacaaaacc aagtgtcctt atactactgg ttttaagcat ccttcctttc tgataaggac
 tgaacagcca ttttagagatt gaggttttaa gtataatgag cctaggtgat attgaagtca
 acagatgtta tgattgagag gtattccgat ttatgcacct accaggacaa gagaggagga
 aaggaatatg tgcaacattc taatgaataa acatataaac aaaaataaaa ttgagtgttg
 aggcaaagaa catgactgtt acccaaacat ttaagccaca acatcaaatt cttcaaattc
 tgtgaactaa gataagttta atataacaaa tacatgttgg cctgactgcc tcattaaatg
 gcaaaatatt tacataaatt aagcatattc attttaagtc acaagggggg tagttattaa
 aatccgaatg ccaaaatctc caaaaattct agtttttttt ttttttacta taaaatctga
 attttttagtg aaaaaaaaaa acaaacaaat ttttcaaat ttattatacc ccgagaatgg
 aaaaagtcag gatacgaaaa tccggcattt tagacctgtc gaggtggtat atatatatat
 ataagtcaat tgcagagttt cctatagtat ttggaaattt tctcgctgaa attagccata
 aaattctact attttgact ttttgggcaa aaatctgaaa aattcagggg ttttgggaaa
 aacccttaaa aatccagcaa tttggggaaa actctgaaaa aaacatacga tttggatttt
 ctctagattt tgttgagttt gtccccgatc caattaaatt gtgttttttt attaataaat
 aaagtcacaa catcagattt tttttttggg cagacttttt tcattttaaatt cagaaaaatt
 ctgattttga taaataatgc cctaagtgtg gcaaatatta atatgtgggt gtgaactata
 gtcagtttat tataagtatt ttacaagtat agatcagtat agctctatag tataaatctt
 actaaactaa agtaatttag tagtatctgt gaaaa

<210> 81
 <211> 778
 <212> PRT
 <213> *Xenopus laevis*
 <400> 81

Met	Ala	Thr	Ala	Arg	Met	Asp	Ile	Pro	Ser	Pro	Gly	Tyr	Asn	Gln	Tyr
1				5					10					15	
Leu	Val	His	Arg	Ser	Val	Tyr	Ser	Glu	Pro	Thr	Phe	Gln	Glu	Glu	Asn
			20					25					30		
Glu	Arg	Lys	Glu	Pro	Val	Arg	Lys	Thr	Leu	Gln	Asp	Arg	Val	Lys	Lys
		35					40					45			

Asn Cys Ser Cys Thr Ser Lys Lys Ala Leu Phe Ile Val Lys Lys Phe
 50 55 60
 Leu Pro Ile Leu Asn Trp Leu Pro Lys Tyr Arg Trp Lys Glu Trp Phe
 65 70 75 80
 Leu Ser Asp Leu Ile Ser Gly Val Ser Thr Gly Leu Val Gly Thr Leu
 85 90 95
 Gln Gly Leu Ala Phe Ala Leu Leu Ala Val Pro Val Gly Tyr Gly
 100 105 110
 Leu Tyr Ser Ser Phe Phe Pro Ile Leu Thr Tyr Phe Phe Leu Gly Thr
 115 120 125
 Ser Lys His Ile Ser Val Gly Pro Phe Pro Val Val Ser Leu Met Val
 130 135 140
 Gly Ser Val Val Leu Ser Ile Ala Pro Asp Glu Lys Phe Ala Ile Leu
 145 150 155 160
 Gly Asn Ser Thr Gly Leu Asn Lys Thr Ile Ile Asp Thr Val Ala Arg
 165 170 175
 Asp Ala Ala Arg Val Ala Val Ser Gly Thr Leu Ser Phe Leu Ile Gly
 180 185 190
 Ile Ile Gln Leu Ala Leu Gly Val Phe Gln Ile Gly Phe Ile Ile Arg
 195 200 205
 Tyr Leu Ala Asp Pro Leu Val Gly Gly Phe Thr Thr Ala Ala Ala Phe
 210 215 220
 Gln Val Phe Val Ser Gln Phe Lys Leu Val Leu Asn Val Pro Thr Lys
 225 230 235 240
 Asn Tyr Asn Gly Val Leu Ser Ile Ile Tyr Thr Ile Ile Asp Ile Phe
 245 250 255
 Thr Asn Ile Ala Lys Thr Asn Ile Ala Asp Leu Ile Ala Gly Leu Leu
 260 265 270
 Thr Phe Val Val Cys Val Val Val Lys Glu Ile Asn Asp Arg Tyr Lys
 275 280 285
 Arg Ile Phe Arg Val Pro Ile Pro Ile Glu Val Ile Val Thr Ile Val
 290 295 300
 Ala Thr Gly Ile Ser Tyr Gly Val Asn Leu Glu Lys Lys Tyr Asn Ala
 305 310 315 320
 Gly Ile Val Lys Thr Ile Pro Thr Gly Phe Ile Pro Pro Met Thr Pro
 325 330 335
 Asp Val Ser Leu Phe Ser Gln Ile Gly Ser Ser Ala Phe Ser Ile Gly
 340 345 350
 Ile Val Ala Tyr Ala Val Ala Val Ser Val Gly Lys Val Tyr Ala Thr
 355 360 365
 Lys His Asn Tyr Glu Val Asp Gly Asn Gln Glu Phe Ile Ala Phe Gly
 370 375 380
 Ile Ser Asn Leu Phe Gly Gly Val Phe Ser Cys Phe Cys Ala Thr Thr
 385 390 395 400
 Ala Leu Ser Arg Thr Ala Ile Gln Glu Ser Thr Gly Gly Lys Thr Gln
 405 410 415

Ile Ala Gly Ile Ile Ser Ala Gly Ile Val Leu Ile Ala Ile Val Ala
 420 425 430
 Leu Gly Lys Leu Leu Glu Pro Leu Gln Lys Ser Val Leu Ala Ala Ile
 435 440 445
 Val Ile Ala Asn Leu Lys Gly Met Phe Trp Gln Val Phe Asp Val Pro
 450 455 460
 Arg Leu Trp Lys Gln Asn Lys Trp Asp Ser Val Ile Trp Val Phe Thr
 465 470 475 480
 Cys Ile Ala Ser Ile Leu Leu Gly Leu Asp Leu Gly Leu Leu Ala Gly
 485 490 495
 Leu Leu Phe Gly Leu Val Thr Ile Ile Leu Arg Val Gln Phe Pro Ser
 500 505 510
 Cys Gly Ala Leu Gly Ser Val Pro Gly Thr Asp Ile Tyr Lys Asn Val
 515 520 525
 Lys Glu Tyr Lys Asn Leu Ile Glu Pro Glu Gly Val Lys Ile Ile Arg
 530 535 540
 Tyr Thr Ser Gly Met Phe Tyr Gly Asn Ile Asp Gly Phe Lys Asn Ala
 545 550 555 560
 Ile Lys Ser Ile Val Gly Phe Asp Ala Val Lys Val Tyr Asn Lys Arg
 565 570 575
 Thr Lys Ala Leu Arg Lys Ile Gln Lys Leu Ile Lys Lys Gly Gln Leu
 580 585 590
 Arg Ser Thr Lys Asn Gly Ile Ile Ser Ser Thr Gly Ala Asp Asn Glu
 595 600 605
 Gly Tyr Glu Pro Asp Asp Asp Pro Glu Asp Pro Glu Gln Glu Asn Asn
 610 615 620
 Glu Ala Val Gln Thr Lys Glu Val Glu Ile Gln Val Asp Trp Asn Ser
 625 630 635 640
 Glu Leu Pro Ile Lys Val Ser Val Pro Lys Val Ser Ile His Ser Ile
 645 650 655
 Ile Phe Asp Phe Gly Gln Ile His Phe Ile Asp Val Val Ala Val Arg
 660 665 670
 Ser Leu Lys Val Ile Phe Lys Glu Phe Lys Arg Ile Asp Val Glu Pro
 675 680 685
 Tyr Ile Ala Ala Tyr Glu Asp Gly Val Leu Gln Lys Met Glu Lys Cys
 690 695 700
 Phe Phe Phe Asp Glu Val Ile Lys Arg Asp Ile Phe Phe Leu Thr Val
 705 710 715 720
 His Asp Ala Val Leu His Ile Glu Asn Leu Arg Lys Phe Tyr Asp Gly
 725 730 735
 His Asp Pro Leu Leu Glu Lys Ile Ser Leu Met Gln Glu Ser Lys Glu
 740 745 750
 Pro Leu Glu Phe Thr Thr Thr Asp Pro Thr Asp Gln Glu Leu Asp Ala
 755 760 765
 Gln Glu Gly Ala Leu Arg Ser Leu Ala His
 770 775

<210> 82
<211> 2640
<212> DNA
<213> *Xenopus laevis*
<400> 82
ccacgcgtcc gccacgcgt ccgctctttg gactcatgga atcctcaact gacagcaagt
atthttgtggc aagatctgtt tattcagacc agtccttcaa ggaagaacat gagaagagag
aaattgttca cagaccactt aaacaaaagt taaaaaaaaac attcagctgt acccctaaaa
aggcatacag ggtagccaaa acttttatac ctgtcttggg ctggcttccc aaatacagat
ggaaagaatg gattgtgtca gatattatag ctggagtcag tgtaggtcta atttcagctt
tacaaggctt ggctttcggg ttgttggctg gagttcctat tcagtttggg ctatattcct
ctttctttcc tgttttaaca tactgtctct tggggacctc taagcacatt tcagttgggc
cattcccagt ggtatgtctg atgggtggga ttgttactat atctatggct ccagatgatc
aattttccgt tataaccaat ggcactacag tcataaacac aacggccagg gatgcagcta
gaattaacat ctgtgggaca ctctccttcc tgattggaat cctacagctt tttctgggaa
tatttcggat tggattcatt gttaggtacc tggcagatcc actgatcgga ggcttcacca
cagctgccgc tttccaagt actgtttcac aaataaaaac catcctcaat gttcctgcc
aaaactacaa tgggtgtgctt tccataatat atacaattat agatataatt tccaacattg
ctcaaaactaa ttttgcgcac ctcatgtctg ggctgctgac tttagtaatt gttctagcgg
taaaggagggt aaatgatcgc tttaaagaga agattcgtgt gcctattcct atagagatta
ttgtgacaat ttagctaca ggaatttctt atggagcgaa cctagcaggg aaatacaatg
caggaataat aaagaccatt ccgagcggat tcattccagc tatgtcacca gatgtcagct
tgthtttctc gctcattagt tctgcgtttt cactggaat agttgcata gctattgtaa
tatcagttgg aaaggctctat gggacaaaaga ataactacag ggttgatgga aatcaggaat
tcattgccta tgggatcagc aatatgtttg gaggcatttt ctcttgthtt ttgtctagca
ctgctctgtc tcgtactgca attcaagaag gaactggagg aaaaagccag attgcaagca
tgatttcagc actcatggtt ctcatgtcta ttgtggccat tggcaggcta cttgaacctc
tgcaaaaagtc ggtgttggca gctattgttg tagccaattt aaagggaatg ttcattgcagg
tccgtgatat tctgttctt tggagacaga atagatggga tgcagttata tgggttttca
catgcgtctc agcaatcatc cttggtttag atttgggatt gttggctggg ttagtgthtt
gactattgac tgttgttctg cgtgtccagt tccatcatg cagttctctt gcaaatatcc
ataacacaga tctttataaa gatgtaaaga tgtacaaaaga tcttattgag ccaggagggtg
taagaattat tcgattttct ggaggaattt tctatggcaa tattgaagggt ttgaagaatg
gcattaaaaa aatagttgga tttgatgcta ccagagthtt tgacaagagg gcaaaggctc
ttcgtatgat tcaaacctt atcaagaaag gtcaactggg agcaacttgg aatggtattg
tcagtggtag agggatcgat aatgagggtt tcgaactaga tgatgaacaa gatgaccag
aattagaaca aaaccacgac attcacacaa atgaagtggg gatccaagtg gattggaatt

cagagctccc cttaacagtg tctgtcccta aagttactgt tcacactatt gtttttgatt
 ttgcaccagt cacctttctc gatgtgatgg cagtgaaaaa cttaaaactg ataattaaag
 aattcaagag gattgatgta gatatttaca ttgcagcctg tgatgataat gtctacaaca
 aaatggaagt ctgcggattt tttgatgatg ctatcaagcc tgacatcttt ttcctcactg
 tccatgatgc tatgctctac atagaaaagg agagaaactt tgaaagtgca agtgatccca
 tacttgaaaa gatttcacta atgcaggaga ataaaggaca gctggacttc ttgatagagc
 cagtagatcc agtacaccag gagttagcgg cacatgaaga ggctattaaa cgatacgcat
 cataaggcac cctcgagctg ccaaactgga ttcaaaccac atcttcttat ctctaaccat
 accagagtct acaaacttct tttcaagtac agagatatat gtcagtgaat taaattatat
 aaatatttgt acaacaaaag aaagaaatgc tgcaactggt ttactgtatg ttattgaaag
 ttagtccttt tattgtgtgt tctttttttg atcttttagta aatgctatgt acaatgtata
 ctgtatccca ttacataaaa ataaacgtat tctttttaac attcaaaaaa aaaaaaaaaa

<210> 83
 <211> 769
 <212> PRT
 <213> Xenopus laevis
 <400> 83

Met	Glu	Ser	Ser	Thr	Asp	Ser	Lys	Tyr	Phe	Val	Ala	Arg	Ser	Val	Tyr	1	5	10	15
Ser	Asp	Gln	Ser	Phe	Lys	Glu	Glu	His	Glu	Lys	Arg	Glu	Ile	Val	His	20	25	30	
Arg	Pro	Leu	Lys	Gln	Lys	Leu	Lys	Lys	Thr	Phe	Ser	Cys	Thr	Pro	Lys	35	40	45	
Lys	Ala	Tyr	Arg	Val	Ala	Lys	Thr	Phe	Ile	Pro	Val	Leu	Asp	Trp	Leu	50	55	60	
Pro	Lys	Tyr	Arg	Trp	Lys	Glu	Trp	Ile	Val	Ser	Asp	Ile	Ile	Ala	Gly	65	70	75	80
Val	Ser	Val	Gly	Leu	Ile	Ser	Ala	Leu	Gln	Gly	Leu	Ala	Phe	Gly	Leu	85	90	95	
Leu	Ala	Gly	Val	Pro	Ile	Gln	Phe	Gly	Leu	Tyr	Ser	Ser	Phe	Phe	Pro	100	105	110	
Val	Leu	Thr	Tyr	Cys	Phe	Leu	Gly	Thr	Ser	Lys	His	Ile	Ser	Val	Gly	115	120	125	
Pro	Phe	Pro	Val	Val	Cys	Leu	Met	Val	Gly	Ile	Val	Thr	Ile	Ser	Met	130	135	140	
Ala	Pro	Asp	Asp	Gln	Phe	Ser	Val	Ile	Thr	Asn	Gly	Thr	Thr	Val	Ile	145	150	155	160
Asn	Thr	Thr	Ala	Arg	Asp	Ala	Ala	Arg	Ile	Asn	Ile	Cys	Gly	Thr	Leu	165	170	175	
Ser	Phe	Leu	Ile	Gly	Ile	Leu	Gln	Leu	Phe	Leu	Gly	Ile	Phe	Arg	Ile	180	185	190	

Gly Phe Ile Val Arg Tyr Leu Ala Asp Pro Leu Ile Gly Gly Phe Thr
 195 200 205
 Thr Ala Ala Ala Phe Gln Val Thr Val Ser Gln Ile Lys Thr Ile Leu
 210 215 220
 Asn Val Pro Ala Lys Asn Tyr Asn Gly Val Leu Ser Ile Ile Tyr Thr
 225 230 235 240
 Ile Ile Asp Ile Phe Ser Asn Ile Ala Gln Thr Asn Phe Ala Asp Leu
 245 250 255
 Ile Ala Gly Leu Leu Thr Leu Val Ile Val Leu Ala Val Lys Glu Val
 260 265 270
 Asn Asp Arg Phe Lys Glu Lys Ile Arg Val Pro Ile Pro Ile Glu Ile
 275 280 285
 Ile Val Thr Ile Val Ala Thr Gly Ile Ser Tyr Gly Ala Asn Leu Ala
 290 295 300
 Gly Lys Tyr Asn Ala Gly Ile Ile Lys Thr Ile Pro Ser Gly Phe Ile
 305 310 315 320
 Pro Ala Met Ser Pro Asp Val Ser Leu Phe Ser Ser Leu Ile Ser Ser
 325 330 335
 Ala Phe Ser Thr Gly Ile Val Ala Tyr Ala Ile Val Ile Ser Val Gly
 340 345 350
 Lys Val Tyr Gly Thr Lys Asn Asn Tyr Arg Val Asp Gly Asn Gln Glu
 355 360 365
 Phe Ile Ala Tyr Gly Ile Ser Asn Met Phe Gly Gly Ile Phe Ser Cys
 370 375 380
 Phe Cys Ala Ser Thr Ala Leu Ser Arg Thr Ala Ile Gln Glu Gly Thr
 385 390 395 400
 Gly Gly Lys Ser Gln Ile Ala Ser Met Ile Ser Ala Leu Met Val Leu
 405 410 415
 Ile Ala Ile Val Ala Ile Gly Arg Leu Leu Glu Pro Leu Gln Lys Ser
 420 425 430
 Val Leu Ala Ala Ile Val Val Ala Asn Leu Lys Gly Met Phe Met Gln
 435 440 445
 Val Arg Asp Ile Pro Val Leu Trp Arg Gln Asn Arg Trp Asp Ala Val
 450 455 460
 Ile Trp Val Phe Thr Cys Val Ser Ala Ile Ile Leu Gly Leu Asp Leu
 465 470 475 480
 Gly Leu Leu Ala Gly Leu Val Phe Gly Leu Leu Thr Val Val Leu Arg
 485 490 495
 Val Gln Phe Pro Ser Cys Ser Ser Leu Ala Asn Ile His Asn Thr Asp
 500 505 510
 Leu Tyr Lys Asp Val Lys Met Tyr Lys Asp Leu Ile Glu Pro Gly Gly
 515 520 525
 Val Arg Ile Ile Arg Phe Ser Gly Gly Ile Phe Tyr Gly Asn Ile Glu
 530 535 540
 Gly Leu Lys Asn Gly Ile Lys Lys Ile Val Gly Phe Asp Ala Thr Arg
 545 550 555 560

Ser

```

<210>      84
<211>    2457
<212>      DNA
<213>    Xenopus laevis
<400>      84
ttccaataaaa tatttgacct ccttaatgaa tgatcatttc ctctcataga tcaagacaga

tggatatgtc tacctatggg aacagccagt atctctctggc cagaccaatt tacactcaac

caacttttga gaagctgaac atggagaaaa caccaaaaaa aaatactcgc aaacctttca

aaaaatagggtt acagaaaacc ttcagctgta catctacaaa ggctgttcat atgggtcaaga

aatatatccc tgtgctgaac tggctgccaa aatacagctg gaagtcattg tttgtgcacg

atttgatttc aggagtcagc acagggatgg ttggtaccct acaaggctctg gcgtttgcgt

tacttgctga agttccagta ggatatggaa tttattcttc tttttttcca attctgacat

atTTTTTcct gggaaacttct aaacatatTT cagttgggcc attcccagtg atcagtttaa

tggtaggctc tgttgttctg tccatggctc caaatgaaaa ttttattgta tacaacacca

caaatctcaa tgaacaggaa atgataattg acacagaagc cagggatgct gctagagtcc

ttgtatcagg aacattaagt ttcttaattg gaatcataca gcttgtgtta ggagctcttc

```

agtttggctt tattgtaaga tatttggcag agccattagt gcgaggcttc accacagggg
ctgctttcca agcattcacc tctcaaataa aactgatact caatgttccc acaaataccc
acagtgggaat gttttcaaca ttttatacaa tgaatgatat cttctccaat atttctaaaa
caaatgtggc agacctcatt gctggacttc taacaatttt tgtatgtgtg gcggtcaagg
aaattaatga gcggtataaa aattttctgc gcatacccat tcctatagag ataattgtgt
ctttaatagc tgcattggatt tcatatggag tagatctgga aaataaatat aatgcaggca
cagtaaagaa tattccaagt gggttcatal caccatgat gccagatgtg agcatgttct
cccaaattat tagctctgca atttccattg gaatagtggc atatgctgtt gctgtatcat
tgggaaaggt ttttgccacc aaatataact atgcaattga tggaaatcag gaatttgttg
catttggggt cagcaatata ttcagtgggt ttttctcttg cttttgtgcc accactgctt
tgtctcgaa agctattcaa gaaagtactg gaggtaaaac tcagattgct ggtttgatat
ctgctgcaac tattataatt actatgtttg tccttggcca gtttcttcaa cctctacaga
agtctgtact ggcagcgatt gtcatatcca acttaaaggg gatgttttgg caagctctgg
atatacctcg tttgtggaaa cagaataagt gggatgcagc tatctggatc tttgcatgtt
tttcaaccat cattttggat cttgatttag gactcttgtg tggattaatg tttggattat
ttactgtaat tctacggata cagtccccct cttgtcactc ccttggaaat cttcctggaa
cagaaatcta ccgagatctc aagaagtaca aaaatgtcgt ggaacaggaa ggaattaaaa
ttattcgggt ttccagtgggt attttctatg gaaatgtcga cagcttaaaa aatggcataa
aatccattgt tggatttgat tcagtttagag ttttcaacaa gagagcgaaa gcagagctga
agataagtga gcttatcaag aaaggacaat tgaaagtaac taagaatgga attataacaa
atacattcac ggaagattca gaatctgatg aagaatcaca acagtttgaa aatcctcaaa
acaaaaagga agaaacggaa ttccaagggg actggaattc agatctacct gtattaaatt
ctgttcctaa agtctttatt cacagcatca ttttggattt tggacatgtc aattttcttg
atgttgtggc agtgacatcc cttaaactga tttttaaaga tttcagaaga attgctgtcg
atgtttatat tgcaggatgt gatgatgaaa tttttgagaa actggaagta tgtggcttct
ttgaggataa caacaaacca gacatctgtt ttctgtcggg ccacgaggct gtaatttaca
tattaaacca aagagagttc tgtagtgatc aaaattcact tggcaaggcg gcagttgtga
aaaatgaaca tgtagttca ttagaactgg atctacagga tgaggagAAC agagcatgtt
ccagtgttct cagtataaga agatctggat cttcaggacg attgtcttta ggctgaacaa
ataaccttta caatggattc caaatgata ttaaccctct gtaaaaaaaaa aaaaaaa

<210> 85
<211> 788
<212> PRT
<213> *Xenopus laevis*
<400> 85

Met Ile Ile Ser Ser His Arg Ser Arg Gln Met Asp Met Ser Thr Tyr
 1 5 10 15
 Gly Asn Ser Gln Tyr Leu Leu Ala Arg Pro Ile Tyr Thr Gln Pro Thr
 20 25 30
 Phe Glu Lys Leu Asn Met Glu Lys Thr Pro Lys Lys Asn Thr Arg Lys
 35 40 45
 Pro Phe Lys Asn Arg Leu Gln Lys Thr Phe Ser Cys Thr Ser Thr Lys
 50 55 60
 Ala Val His Met Val Lys Lys Tyr Ile Pro Val Leu Asn Trp Leu Pro
 65 70 75 80
 Lys Tyr Ser Trp Lys Ser Leu Phe Val His Asp Leu Ile Ser Gly Val
 85 90 95
 Ser Thr Gly Met Val Gly Thr Leu Gln Gly Leu Ala Phe Ala Leu Leu
 100 105 110
 Ala Glu Val Pro Val Gly Tyr Gly Ile Tyr Ser Ser Phe Phe Pro Ile
 115 120 125
 Leu Thr Tyr Phe Phe Leu Gly Thr Ser Lys His Ile Ser Val Gly Pro
 130 135 140
 Phe Pro Val Ile Ser Leu Met Val Gly Ser Val Val Leu Ser Met Ala
 145 150 155 160
 Pro Asn Glu Asn Phe Ile Val Tyr Asn Thr Thr Asn Leu Asn Glu Thr
 165 170 175
 Glu Met Ile Ile Asp Thr Glu Ala Arg Asp Ala Ala Arg Val Leu Val
 180 185 190
 Ser Gly Thr Leu Ser Phe Leu Ile Gly Ile Ile Gln Leu Val Leu Gly
 195 200 205
 Ala Leu Gln Phe Gly Phe Ile Val Arg Tyr Leu Ala Glu Pro Leu Val
 210 215 220
 Arg Gly Phe Thr Thr Gly Ala Ala Phe Gln Ala Phe Ile Ser Gln Met
 225 230 235 240
 Lys Leu Ile Leu Asn Val Pro Thr Asn Thr His Ser Gly Met Phe Ser
 245 250 255
 Thr Phe Tyr Thr Met Asn Asp Ile Phe Ser Asn Ile Ser Lys Thr Asn
 260 265 270
 Val Ala Asp Leu Ile Ala Gly Leu Leu Thr Ile Phe Val Cys Val Ala
 275 280 285
 Val Lys Glu Ile Asn Glu Arg Tyr Lys Asn Phe Leu Arg Ile Pro Ile
 290 295 300
 Pro Ile Glu Ile Ile Val Ser Leu Ile Ala Ala Trp Ile Ser Tyr Gly
 305 310 315 320
 Val Asp Leu Glu Asn Lys Tyr Asn Ala Gly Thr Val Lys Asn Ile Pro
 325 330 335
 Ser Gly Phe Ile Pro Pro Met Met Pro Asp Val Ser Met Phe Pro Gln
 340 345 350
 Ile Ile Ser Ser Ala Ile Ser Ile Gly Ile Val Ala Tyr Ala Val Ala
 355 360 365

Val Ser Leu Gly Lys Val Phe Ala Thr Lys Tyr Asn Tyr Ala Ile Asp
 370 375 380
 Gly Asn Gln Glu Phe Val Ala Phe Gly Val Ser Asn Ile Phe Ser Gly
 385 390 395 400
 Phe Phe Ser Cys Phe Cys Ala Thr Thr Ala Leu Ser Arg Thr Ala Ile
 405 410 415
 Gln Glu Ser Thr Gly Gly Lys Thr Gln Ile Ala Gly Leu Ile Ser Ala
 420 425 430
 Ala Thr Ile Ile Ile Thr Met Phe Val Leu Gly Gln Phe Leu Gln Pro
 435 440 445
 Leu Gln Lys Ser Val Leu Ala Ala Ile Val Ile Ser Asn Leu Lys Gly
 450 455 460
 Met Phe Trp Gln Ala Leu Asp Ile Pro Arg Leu Trp Lys Gln Asn Lys
 465 470 475 480
 Trp Asp Ala Ala Ile Trp Ile Phe Ala Cys Phe Ser Thr Ile Ile Leu
 485 490 495
 Asp Leu Asp Leu Gly Leu Leu Cys Gly Leu Met Phe Gly Leu Phe Thr
 500 505 510
 Val Ile Leu Arg Ile Gln Phe Pro Ser Cys His Ser Leu Gly Asn Leu
 515 520 525
 Pro Gly Thr Glu Ile Tyr Arg Asp Leu Lys Lys Tyr Lys Asn Val Val
 530 535 540
 Glu Gln Glu Gly Ile Lys Ile Ile Arg Phe Ser Ser Gly Ile Phe Tyr
 545 550 555 560
 Gly Asn Val Asp Ser Leu Lys Asn Gly Ile Lys Ser Ile Val Gly Phe
 565 570 575
 Asp Ser Val Arg Val Phe Asn Lys Arg Ala Lys Ala Glu Leu Lys Ile
 580 585 590
 Ser Glu Leu Ile Lys Lys Gly Gln Leu Lys Val Thr Lys Asn Gly Ile
 595 600 605
 Ile Thr Asn Thr Phe Thr Glu Asp Ser Glu Ser Asp Glu Glu Ser Gln
 610 615 620
 Gln Phe Glu Asn Pro Gln Asn Lys Lys Glu Glu Thr Glu Phe Gln Gly
 625 630 635 640
 Asp Trp Asn Ser Asp Leu Pro Val Leu Asn Ser Val Pro Lys Val Phe
 645 650 655
 Ile His Ser Ile Ile Leu Asp Phe Gly His Val Asn Phe Leu Asp Val
 660 665 670
 Val Ala Val Thr Ser Leu Lys Leu Ile Leu Lys Asp Phe Arg Arg Ile
 675 680 685
 Ala Val Asp Val Tyr Ile Ala Gly Cys Asp Asp Glu Ile Phe Glu Lys
 690 695 700
 Leu Glu Val Cys Gly Phe Phe Glu Asp Asn Asn Lys Pro Asp Ile Cys
 705 710 715 720
 Phe Leu Ser Val His Glu Ala Val Ile Tyr Ile Leu Asn Gln Arg Glu
 725 730 735

Phe Cys Ser Asp Gln Asn Ser Leu Gly Lys Ala Ala Val Val Lys Asn
 740 745 750
 Glu His Val Ser Ser Leu Glu Leu Asp Leu Gln Asp Glu Glu Asn Arg
 755 760 765
 Ala Cys Ser Ser Val Ser Ser Ile Arg Arg Ser Gly Ser Ser Gly Arg
 770 775 780

Leu Ser Leu Gly
 785

<210> 86

<211> 3200

<212> DNA

<213> *Xenopus laevis*

<400> 86

cttgtgttgt aaatcaattc ctgaactttg aacacaatct ataaaattta ttgtataggt
 aacacagaga aatgttcatg caactttaac tttggcaagt gcattcttca tgccatccag
 gaagatgagg actgcttttt actaagagaa aaacattatt ttgatgccat tttttaagaa
 aacactaagt tgcaatgaaa aacgcagtca acatgaaata tgaaagagaa caaagcaaga
 tggatgaaga ttcacagcat accctaattc atctggaaag aaaagctact aacagagtta
 gcctgtgtaa gactgtaaaa gccaaagtta aaaagcaatg cacctgcaat agcaagcaac
 tcaaaaaaac attcatgggc tttttccag tgttacgctg gctcccaaag tatgacttca
 aagaaaatac atgggggtgat gtgatgtcgg gacttatcat tgggtatcata ttggtgcccc
 aagctatagc atattctctt ctggctgggt tgaaacccat ttacagcttg tacacatctt
 tttttgctaa tattatttat ttcttaatgg ggacctcccg acacgtatca gtgggcattt
 tcagcttaat aagtttgatg gttggccagg ttgttgatcg agaagtacag ctggcaggtt
 ttgacctaga tgatgatgca gtacctcaaa taaataactt caacatgagt gacttaaaaca
 ttacaagatc cataaacatt agtatgggccc tgatggacat tgagtgtgga aaagaatggt
 atgcaatcag cgttgcagct atactgacat tcacggctgg tatttatcag gtcattatgg
 ggagttttcg cttgggtttc ctctctatgt atctatcaga gccaatgttg gatggatttg
 caactggagc ttccctgaca atattaactg cccaagtga ataccttctt ggaataaaaa
 tcccacgtag tccaggcatt ggcagtctgg tgacaacttg gtataacata tttgcaaata
 ttcaccacag caactattgt gatattatta caagtgccat ttgtattgct gttctgggtg
 cagctaaaga aataggagat cgatacaaag aaaaaattaa aattccactt ccaacagaat
 tagtggtaat tgtagtggct actgtggtat cacattactg caatctgaag gaagtttatg
 gatctgctgt ctctgggtga atcccaactg gatttatacc cccacaagtt ccaaatttta
 gccttttttg caaaaatagca gtagatgcaa tacccttgc agttatcagt tttgccttta
 ccatctcttt gtcagaaatg tttgcaaaaa aatatgcata tacagtggaa gcaaaccagg
 agatgtttgc cattgggttc tgtaataata tcccatcatt tttccactgt tttgccacga
 gtgcagctct agcaaaaact ctagtgaaaa ctccactgg gtgcatgaca caagtatcta
 gcgttattag tgcaattgtg gtactgctag ttcttctttt ctttgcacct ctgttttatt

cactgcagaa atgtgtctta gcctgtataa taattgttag tttacgaggc gctctaagga
 aattcagaga tctgccaaact ctgtggcgcc taaataaaat agatgcagtg gtctgggtgtg
 tgacgggtggc tgtgcagct ctggtcagta cagaagtagg cctcatggta ggagtgattt
 tttcaatgtt gtgtctaatt ttacgctctc agttgcctta caccaccatg cttaatcaaa
 ttgaagacac tgtgttttat gaagattgcc aaaaatatga caaccttctt ccaattccca
 aagtaaaaaat attccgattc aactcacccc tccattacgc aaataaagga tatttttttaa
 aggctctgtt caaaatggct gctatggatc caggcctagt taatgcacag cgcaaaaaaa
 tggaaaagaa agctaaaaat cagggaaaac ggaacaagt agatgccgca aacaaccttg
 gttatgggtga aacccaaata gaacttgttg aaaagcgtaa cgatttgcaa accattattc
 ttgattgttc ttgtattgca tttttggaca taactggcat gaatgtatta aagggtttgt
 taaaagacta caaggaagtg caagtcagtg tgctattggc ttgctgcagc acatctgtaa
 ttgactctct tattaggggg gggtatttcg gcaaagagaa ttcagacatt cacaaactgc
 ttttttacac tgtccatgat gctgtacagt ttgcaagagc acaaactatt tctgccactg
 actccactgt gtaaatgatg ataaaaattc acaggctttc aaaagcattc tgaagtatat
 attacattgc atttatctgg tagttcctga ttgtagaggt gttaactatt atgttttctt
 caggacactg aatttgacag tatcactcta agacacttag tgaaagtgca aaccacctat
 tttatatagt ggtataccac acagcctgta atctaatact gctgctggag atcttgtcaa
 gtgacagagt tggctatgac tacagtaaat attgctgtat taatgtaaga aagataaaat
 gatttgtgta tcctgaggca ccataagaca ggcactctgc ccagctttaa tcccatgtct
 ccaccatgtc acttgcccaa tcaagtgcct gcaggggttg tcagctcccc ccttcatagt
 cttcatagct tatttctcct atggaagcaa ccaagttatt tttattaata atataatcta
 aaaagtgcc aatatattcaa tggctgaata gagctgttgt gaacttttgg attatagtag
 attcaggaag atgtaattgc atacctttat tttccccact actttgctaa ttttcatccc
 acccagttag aagaattttc tggagagaac agtgtgctga ctagtgtat aagtatcagt
 ctgtagccgt atacctataa caagcataaa taattatgta tcaaattggtg aaatgtggga
 aaaacgcttt aaactgattt tcattccaat ggaattgcat gtaaaatgat acacgccctt
 caatgtcttt tgttggaaaca atgtttatgg caaaaaaccc actcacactt acaccaagat
 ctatcaaaaa aaaaaaaaaa

<210> 87
 <211> 719
 <212> PRT
 <213> *Xenopus laevis*
 <400> 87

Met	Lys	Asn	Ala	Val	Asn	Met	Lys	Tyr	Glu	Arg	Glu	Gln	Ser	Lys	Met
1				5					10					15	
Asp	Glu	Asp	Ser	Gln	His	Thr	Leu	Ile	His	Leu	Glu	Arg	Lys	Ala	Thr
			20				25						30		

Asn	Arg	Val	Ser	Leu	Cys	Lys	Thr	Val	Lys	Ala	Lys	Val	Lys	Lys	Gln	35	40	45
Cys	Thr	Cys	Asn	Ser	Lys	Gln	Leu	Lys	Lys	Thr	Phe	Ile	Gly	Phe	Phe	50	55	60
Pro	Val	Leu	Arg	Trp	Leu	Pro	Lys	Tyr	Asp	Phe	Lys	Glu	Asn	Thr	Trp	65	70	75
Gly	Asp	Val	Met	Ser	Gly	Leu	Ile	Ile	Gly	Ile	Ile	Leu	Val	Pro	Gln	85	90	95
Ala	Ile	Ala	Tyr	Ser	Leu	Leu	Ala	Gly	Leu	Lys	Pro	Ile	Tyr	Ser	Leu	100	105	110
Tyr	Thr	Ser	Phe	Phe	Ala	Asn	Ile	Ile	Tyr	Phe	Leu	Met	Gly	Thr	Ser	115	120	125
Arg	His	Val	Ser	Val	Gly	Ile	Phe	Ser	Leu	Ile	Ser	Leu	Met	Val	Gly	130	135	140
Gln	Val	Val	Asp	Arg	Glu	Val	Gln	Leu	Ala	Gly	Phe	Asp	Leu	Asp	Asp	145	150	155
Asp	Ala	Val	Pro	Gln	Ile	Asn	Asn	Phe	Asn	Met	Ser	Asp	Leu	Asn	Ile	165	170	175
Thr	Arg	Ser	Ile	Asn	Ile	Ser	Met	Gly	Leu	Met	Asp	Ile	Glu	Cys	Gly	180	185	190
Lys	Glu	Cys	Tyr	Ala	Ile	Ser	Val	Ala	Ala	Ile	Leu	Thr	Phe	Thr	Ala	195	200	205
Gly	Ile	Tyr	Gln	Val	Ile	Met	Gly	Ser	Phe	Arg	Leu	Gly	Phe	Leu	Ser	210	215	220
Met	Tyr	Leu	Ser	Glu	Pro	Met	Leu	Asp	Gly	Phe	Ala	Thr	Gly	Ala	Ser	225	230	235
Leu	Thr	Ile	Leu	Thr	Ala	Gln	Val	Lys	Tyr	Leu	Leu	Gly	Ile	Lys	Ile	245	250	255
Pro	Arg	Ser	Pro	Gly	Ile	Gly	Met	Leu	Val	Thr	Thr	Trp	Tyr	Asn	Ile	260	265	270
Phe	Ala	Asn	Ile	His	His	Ser	Asn	Tyr	Cys	Asp	Ile	Ile	Thr	Ser	Ala	275	280	285
Ile	Cys	Ile	Ala	Val	Leu	Val	Ala	Ala	Lys	Glu	Ile	Gly	Asp	Arg	Tyr	290	295	300
Lys	Glu	Lys	Ile	Lys	Ile	Pro	Leu	Pro	Thr	Glu	Leu	Val	Val	Ile	Val	305	310	315
Val	Ala	Thr	Val	Val	Ser	His	Tyr	Cys	Asn	Leu	Lys	Glu	Val	Tyr	Gly	325	330	335
Ser	Ala	Val	Ser	Gly	Val	Ile	Pro	Thr	Gly	Phe	Ile	Pro	Pro	Gln	Val	340	345	350
Pro	Asn	Phe	Ser	Leu	Phe	Gly	Lys	Ile	Ala	Val	Asp	Ala	Ile	Pro	Leu	355	360	365
Ala	Val	Ile	Ser	Phe	Ala	Phe	Thr	Ile	Ser	Leu	Ser	Glu	Met	Phe	Ala	370	375	380
Lys	Lys	Tyr	Ala	Tyr	Thr	Val	Glu	Ala	Asn	Gln	Glu	Met	Phe	Ala	Ile	385	390	395

Gly Phe Cys Asn Ile Ile Pro Ser Phe Phe His Cys Phe Ala Thr Ser
 405 410 415
 Ala Ala Leu Ala Lys Thr Leu Val Lys Thr Ser Thr Gly Cys Met Thr
 420 425 430
 Gln Val Ser Ser Val Ile Ser Ala Ile Val Val Leu Leu Val Leu Leu
 435 440 445
 Phe Phe Ala Pro Leu Phe Tyr Ser Leu Gln Lys Cys Val Leu Ala Cys
 450 455 460
 Ile Ile Ile Val Ser Leu Arg Gly Ala Leu Arg Lys Phe Arg Asp Leu
 465 470 475 480
 Pro Thr Leu Trp Arg Leu Asn Lys Ile Asp Ala Val Val Trp Cys Val
 485 490 495
 Thr Val Ala Ala Ala Ala Leu Val Ser Thr Glu Val Gly Leu Met Val
 500 505 510
 Gly Val Ile Phe Ser Met Leu Cys Leu Ile Leu Arg Ser Gln Leu Pro
 515 520 525
 Tyr Thr Thr Met Leu Asn Gln Ile Glu Asp Thr Val Phe Tyr Glu Asp
 530 535 540
 Cys Gln Lys Tyr Asp Asn Leu Leu Pro Ile Pro Lys Val Lys Ile Phe
 545 550 555 560
 Arg Phe Asn Ser Pro Leu His Tyr Ala Asn Lys Gly Tyr Phe Leu Lys
 565 570 575
 Ala Leu Phe Lys Met Ala Ala Met Asp Pro Gly Leu Val Asn Ala Gln
 580 585 590
 Arg Lys Lys Met Glu Lys Lys Ala Lys Asn Gln Gly Lys Arg Lys Gln
 595 600 605
 Val Asp Ala Ala Asn Asn Leu Gly Tyr Gly Glu Thr Gln Ile Glu Leu
 610 615 620
 Val Glu Lys Arg Asn Asp Leu Gln Thr Ile Ile Leu Asp Cys Ser Cys
 625 630 635 640
 Ile Ala Phe Leu Asp Ile Thr Gly Met Asn Val Leu Lys Gly Leu Leu
 645 650 655
 Lys Asp Tyr Lys Glu Val Gln Val Ser Val Leu Leu Ala Cys Cys Ser
 660 665 670
 Thr Ser Val Ile Asp Ser Leu Ile Arg Gly Gly Tyr Phe Gly Lys Glu
 675 680 685
 Asn Ser Asp Ile His Lys Leu Leu Phe Tyr Thr Val His Asp Ala Val
 690 695 700
 Gln Phe Ala Arg Ala Gln Thr Ile Ser Ala Thr Asp Ser Thr Val
 705 710 715

<210> 88

<211> 2829

<212> DNA

<213> *Xenopus laevis*

<400> 88

tctaataagg tgacactata gaaccagatt cattccccct ccctatagag ggctgtgttg

ttagttcccc agcagcagct agtaaggggg gttattttct ctggcacatt gctctctcca

cgattttaaag gtatctctgc aaggttactg agaagctgag gactatccat tcatttgggt
aagacacact tcttctttcg tcaggattgc ccgtactgct ggtcactaca ccactttgta
atgtttctct aagttctctt cccctcaag tggggagatt tatgaggttt acacaaggga
cacttgtaga tctgaaaaga gatgggtgct ccagtagaa gggaagatct cagtaatggg
atagtgatgg atcctgcagt aaggcatcca gtgctgagtg aggccgagtt ggaggaaatg
gcaccaagat ctcagcgagc agtccctcc acattaacca ggatgaagaa gaagataaga
tgttccggat cagttgcaa gtccctgctt ctgaaattca ttccaattct tggttggtta
ccacggtatc cagtaaagga atggctgctc ggagacatag tatctggctt tagtggtggc
atcattcagc tcccacaagg tttagcttat gctttactgg ctggagttcc accggtgttt
ggattgtatt cctcattttt ccctgtactt ctctatgcca tatttgggac ttcaagacat
atttcccctg gaacctttgc tgtgatttct gtgatggttg gtagtgtagac tgaatcactg
gtgccgtcag aaaactacag gttacctgga aatgaatcag tgattgatat agcagccaga
gacaatgaca gagttgaggt ggcacggcc ttgacattcc tagttggact ttttcagatt
atgttgggtc tgggtcaagt tggctttgtt gtaacctacc tctctgaacc cttgatccga
ggctacacca gtgctgctgc aatccatgct actgtgtctc agatgaagag tgttctaggc
gtgcagatca gccaaagaag tcattccattg tctctaattt atgcattcgt gaatctctgt
gccaagggtc ctgagacaaa tattgcttcc cttctaattg ggtgcatctc catcactgtt
ctgtttctgg ttaagtttct aaacgacaag tacagctcaa agatccgtat gccatacca
atcgaaactca tcacgctaatt ttagccact gggatatcat atggtgccag tctccaccaa
gtctatggag tggacattgt aggggagatc ccaactggga tgaaagctcc aatgttacca
aacacaaata tttttgcaag agtggtcggc aatgcctttg ccacgctgt tgtggtctat
gcctttacca tctccctggc taagatgttt ggtgttaaac atggatacaa tattgacagc
aatcagggaac tgatcgctt ggggctgagt aattcaatag gaagcttctt tcagtgttcc
acaattggga cagccatgct aagaagtctg gtgcaagaaa gcacaggagg gcacagtcag
gtagccagtg ctgtctcttc cttggtcac cttattatca ttctaaaagc tggggagctg
tttgaaacct taccaaaagc catactggct gcagttgttg tagtcaatct caaaggtatt
tacaagcagt ttactgatgt gccaatgtta tggagatcca acaaatttga tctgttgggtg
tggctgggta cgtttattgc tacaattctg ctgaacctgg atatcggaact ggctgtttcc
gtggcatttt cactcttaac tgtcatcttc agaaccaga aacccatta ctccatcctg
ggaaagggtcc acaatactga tatctacaga gacgtagccc agtttgatca ggtacaagaa
atacaaggag tgaagatctt ccagtcatcc tgcaccttt actttgcca tgctaactctg
tatgcagagg ctgttaaaaa gatgtgtggc actgatgtgg atacattgat tgaactgaag
aaaaaagcaa tgaaaaagca aaagcagcta caagaaaaag cagagaaaca gatgaagaaa
gaaaacaaaa aaagagaaaa agaattggac tccattgtct ctaatagtcc tgctgccaaa

gagccagaga ttcagattgc agcagactat gaagtcttag aggaagctgg cctggactac
 cttggctcgg aaaaatgcaa cttgcactct cttatcctgg acttgagcac agctggcttt
 ttggatacag tcagtattaa agtttttaaaa aatatattta gggatttcca agaaatcgat
 gttcagggtt accttactgg atgccaagta tacatcattg aacagttaga ggccgccaac
 tttttctcca agtcagtcac caagaacctg ctctttaatt ctgtccatga tgcagtgcg
 tatatttcca ggacacacgg ccagcaggat acgaaaggaa gtgacacgtg cctaaatata
 aagatatgag tcctgccggc tgcaacaagg tttttttggc tccgtagaaa tggaacacgt
 tacaaaacaa agccaaattc tcaatatgct tcacttatgt ggggtgaaat caattttgta
 tgcaagatac ttgtatttta tttctcaaaa gtgttttaag gttcagatat ttttatattt
 ttaaaatata cattgaaaaa accctcacca gccactaatg ggacactgaa ggggcaatct
 cctaaaaata ggaacacatt tagaaacctg accatgaata aaggcctttt tatataaaaa
 aaaaaaaaa

<210> 89
 <211> 735
 <212> PRT
 <213> *Xenopus laevis*
 <400> 89

Met	Gly	Val	Pro	Ser	Arg	Arg	Glu	Asp	Leu	Ser	Asn	Gly	Ile	Val	Met	1	5	10	15
Asp	Pro	Ala	Val	Arg	His	Pro	Val	Leu	Ser	Glu	Ala	Glu	Leu	Glu	Glu	20	25	30	
Met	Ala	Pro	Arg	Ser	Gln	Arg	Ala	Ala	Pro	Ser	Thr	Leu	Thr	Arg	Met	35	40	45	
Lys	Lys	Lys	Ile	Arg	Cys	Ser	Gly	Ser	Val	Ala	Lys	Ser	Leu	Leu	Leu	50	55	60	
Lys	Phe	Ile	Pro	Ile	Leu	Gly	Trp	Leu	Pro	Arg	Tyr	Pro	Val	Lys	Glu	65	70	75	80
Trp	Leu	Leu	Gly	Asp	Ile	Val	Ser	Gly	Leu	Ser	Val	Gly	Ile	Ile	Gln	85	90	95	
Leu	Pro	Gln	Gly	Leu	Ala	Tyr	Ala	Leu	Leu	Ala	Gly	Val	Pro	Pro	Val	100	105	110	
Phe	Gly	Leu	Tyr	Ser	Ser	Phe	Phe	Pro	Val	Leu	Leu	Tyr	Ala	Ile	Phe	115	120	125	
Gly	Thr	Ser	Arg	His	Ile	Ser	Pro	Gly	Thr	Phe	Ala	Val	Ile	Ser	Val	130	135	140	
Met	Val	Gly	Ser	Val	Thr	Glu	Ser	Leu	Val	Pro	Ser	Glu	Asn	Tyr	Arg	145	150	155	160
Leu	Pro	Gly	Asn	Glu	Ser	Val	Ile	Asp	Ile	Ala	Ala	Arg	Asp	Asn	Asp	165	170	175	
Arg	Val	Glu	Val	Ala	Ser	Ala	Leu	Thr	Phe	Leu	Val	Gly	Leu	Phe	Gln	180	185	190	

```

Ile Met Leu Gly Leu Val Gln Val Gly Phe Val Val Thr Tyr Leu Ser
    195                                200                                205

Glu Pro Leu Ile Arg Gly Tyr Thr Ser Ala Ala Ala Ile His Val Thr
    210                                215                                220

Val Ser Gln Met Lys Ser Val Leu Gly Val Gln Ile Ser Gln Arg Ser
    225                                230                                235                                240

His Pro Leu Ser Leu Ile Tyr Ala Phe Val Asn Leu Cys Ala Lys Val
    245                                250                                255

Pro Glu Thr Asn Ile Ala Ser Leu Leu Ile Gly Cys Ile Ser Ile Thr
    260                                265                                270

Val Leu Phe Leu Val Lys Phe Leu Asn Asp Lys Tyr Ser Ser Lys Ile
    275                                280                                285

Arg Met Pro Ile Pro Ile Glu Leu Ile Thr Leu Ile Val Ala Thr Gly
    290                                295                                300

Ile Ser Tyr Gly Ala Ser Leu His Gln Val Tyr Gly Val Asp Ile Val
    305                                310                                315                                320

Gly Glu Ile Pro Thr Gly Met Lys Ala Pro Met Leu Pro Asn Thr Asn
    325                                330                                335

Ile Phe Ala Arg Val Val Gly Asn Ala Phe Ala Ile Ala Val Val Val
    340                                345                                350

Tyr Ala Phe Thr Ile Ser Leu Ala Lys Met Phe Gly Val Lys His Gly
    355                                360                                365

Tyr Asn Ile Asp Ser Asn Gln Glu Leu Ile Ala Leu Gly Leu Ser Asn
    370                                375                                380

Ser Ile Gly Ser Phe Phe Gln Cys Phe Thr Ile Gly Thr Ala Met Ser
    385                                390                                395                                400

Arg Ser Leu Val Gln Glu Ser Thr Gly Gly His Ser Gln Val Ala Ser
    405                                410                                415

Ala Val Ser Ser Leu Val Ile Leu Ile Ile Ile Leu Lys Ala Gly Glu
    420                                425                                430

Leu Phe Glu Thr Leu Pro Lys Ala Ile Leu Ala Ala Val Val Val Val
    435                                440                                445

Asn Leu Lys Gly Ile Tyr Lys Gln Phe Thr Asp Val Pro Met Leu Trp
    450                                455                                460

Arg Ser Asn Lys Phe Asp Leu Leu Val Trp Leu Val Thr Phe Ile Ala
    465                                470                                475                                480

Thr Ile Leu Leu Asn Leu Asp Ile Gly Leu Ala Val Ser Val Ala Phe
    485                                490                                495

Ser Leu Leu Thr Val Ile Phe Arg Thr Gln Lys Pro His Tyr Ser Ile
    500                                505                                510

Leu Gly Lys Val His Asn Thr Asp Ile Tyr Arg Asp Val Ala Gln Phe
    515                                520                                525

Asp Gln Val Gln Glu Ile Gln Gly Val Lys Ile Phe Gln Ser Ser Cys
    530                                535                                540

Thr Leu Tyr Phe Ala Asn Ala Asn Leu Tyr Ala Glu Ala Val Lys Lys
    545                                550                                555                                560

```

Met Cys Gly Thr Asp Val Asp Thr Leu Ile Glu Leu Lys Lys Lys Ala
 565 570 575
 Met Lys Lys Gln Lys Gln Leu Gln Glu Lys Ala Glu Lys Gln Met Lys
 580 585 590
 Lys Glu Asn Lys Lys Arg Glu Lys Glu Leu Asp Ser Ile Val Ser Asn
 595 600 605
 Ser Pro Ala Ala Lys Glu Pro Glu Ile Gln Ile Ala Ala Asp Tyr Glu
 610 615 620
 Val Leu Glu Glu Ala Gly Leu Asp Tyr Leu Gly Ser Glu Lys Cys Asn
 625 630 635 640
 Leu His Ser Leu Ile Leu Asp Leu Ser Thr Ala Gly Phe Leu Asp Thr
 645 650 655
 Val Ser Ile Lys Val Leu Lys Asn Ile Phe Arg Asp Phe Gln Glu Ile
 660 665 670
 Asp Val Gln Val Tyr Leu Thr Gly Cys Gln Val Tyr Ile Ile Glu Gln
 675 680 685
 Leu Glu Ala Ala Asn Phe Phe Ser Lys Ser Val Thr Lys Asn Leu Leu
 690 695 700
 Phe Asn Ser Val His Asp Ala Val Thr Tyr Ile Ser Arg Thr His Gly
 705 710 715 720
 Gln Gln Asp Thr Lys Gly Ser Asp Thr Cys Leu Asn Thr Lys Ile
 725 730 735

<210> 90

<211> 2279

<212> DNA

<213> Sus scrofa

<400> 90

ggcttatggg gctgtcagaa gcgcctggcc agagggacac acaagcactg ctgtccacaa
 cacaacaat ggagctgagg aggcgagact accatgttga gggcctctg ctcaaccaag
 aacagctgga ggagctgggg aaccgaggct cagcaactgg gacctggcag tggcgaaact
 ggtttcgttg ctcccgctgt cgggcctacg cccttctgct ccagtacctc ccagttttga
 cctggctacc ccagtatcct gtgcgtgagt ggcttctggg tgacctgttg tctggcctga
 gtgtggccat tatgcagcta ccacagggct tggcctatgc cctcctagcc ggactgcccc
 ccgtgtttgg cctctacagc tccttctacc ctgtctttat ctatttcctg tttggcactt
 cccggcacat ctctgtgggc acctttgctg tcatgtctgt gatgggtgggc agtgtgacag
 aatcgtggc cccagatgag gacttctgc aggcctcgaa ctctacggtt gatgtggcag
 ccagagatgc taggcgggtg cagctggcct ctgcactcag tgcctagtg ggcctcttct
 aggtggggct gggcctggtc cactttggct tcgtggtcac ctacttgtca gagcctctgg
 tccgtggcta taccacagcc gcgtccgtgc aggtcttcat ctacagctc aagtatgtgt
 ttggcctcca tctgagcagc cgctctgggc cactgtccct catctataca gcactggagg
 tctgctggaa tctgcccag actgtagtca acaccttggc cactgcagtt gtggcagggg
 tgggtgctgt gctggtgaag ctattgaaca acaagctgca gaaacatctg cccgtgcctc

tccccgggga gctactcacg ctcacgggg ccacagggcat ctcctacggc ataggactga
 atgaggtgga tgtcgtgggc agaatccctg cagggtggt gccccagtg gccccagcc
 cgcagctgtt tgcacgtctt gtgggaaatg ccttcgccat cgccgtggtt ggtttcgcca
 ttgccatctc gctggggaag atcttcgccc tgaggcatgg ctaccgggtg gacagcaacc
 aggagctggt ggcgctcggc ctcagtaact tcattggggg catcttcag tgcttccctg
 tgagctgctc tatgtctcgg agcctggtac aggagagcac cgggggcaac acacaggtgg
 ctggagccat ctcctccctc ttcacctca ttatcatcct caaacttggga gaactcttcc
 aagacctgcc caaggcagtt ctggcagccg tcatcattgt gaacctgaag ggcatgttga
 tgcagttcac tgacttatgc tccctctgga agacaaatcg agtggatctg ctcactctggc
 tagtgacctt tgtggccacc atcctgctga acctggacct tggcctggcg gttgcgatag
 ccttctccat gctgctcgtt gtggctcgca tacagctgcc ccactactct gtcctggggc
 agatgccaga cacagacgtt tacagagatg tggcagagta ctcagaagcc agggaggtcc
 cgggcgtgaa aatcttcgc tcctcaacca ccatgttctt tgccaacgct gagctctacg
 gtgacgcgct caagcagagg tgtggtgtgg atgtggacca ctcactctcc cagaagaaga
 agctgctcag gcggcaggag ctaaagctga aacgactgca gaagggcaac aagctcgtga
 aaaaggacac ttctatttcc atcaatgtaa aactgggtat cacaacatc gagagcaacg
 atgtggaggg ctccaacgct aagggtgagt cagagaatga gctagaggat atagcagcgg
 gagatcaaga agatgccaa gccccagcca tgtcctcact gaaggccctg ggtctgcctc
 agccagattt ccacagcctc atcctggacc tgggcaccct ctcctttgtg gacactgtgt
 gtctcaagag cctgaagaat attttccgtg acttccggga gatcgaggtg gaggtgtaca
 tggcgcctg ccactctcct gtggtctcgc agctcgaggc tgggcatttc tttgatgcat
 ctatcaccaa gcagcatctc tttgcttcag tccacgatgc tgtcatcttt gccctccagc
 acccacggtc tggccccgct agccctgctt tggttactaa actctgacca tgctgccac

<210> 91
 <211> 753
 <212> PRT
 <213> Sus scrofa
 <400> 91

Met	Gly	Leu	Ser	Glu	Ala	Pro	Gly	Gln	Arg	Asp	Thr	Gln	Ala	Leu	Leu
1				5					10					15	
Ser	Thr	Thr	Gln	Thr	Met	Glu	Leu	Arg	Arg	Arg	Asp	Tyr	His	Val	Glu
			20					25					30		
Arg	Pro	Leu	Leu	Asn	Gln	Glu	Gln	Leu	Glu	Glu	Leu	Gly	Asn	Arg	Gly
		35					40					45			
Ser	Ala	Thr	Gly	Thr	Trp	Gln	Trp	Arg	Asn	Trp	Phe	Arg	Cys	Ser	Arg
	50					55					60				
Ala	Arg	Ala	Tyr	Ala	Leu	Leu	Leu	Gln	Tyr	Leu	Pro	Val	Leu	Thr	Trp
65					70				75					80	

Leu 85	Pro 85	Val 85	Arg 85	Glu 85	Trp 85	Leu 90	Leu 90	Gly 90	Asp 90	Leu 95	Leu 95	Ser 95			
Gly 100	Leu 100	Ser 100	Val 100	Ala 100	Ile 100	Met 100	Gln 105	Leu 105	Pro 105	Gln 110	Gly 110	Leu 110	Tyr 110	Ala 110	
Leu 115	Leu 115	Ala 115	Gly 115	Leu 115	Pro 115	Pro 115	Val 120	Phe 120	Gly 120	Leu 125	Tyr 125	Ser 125	Ser 125	Phe 125	Tyr 125
Pro 130	Val 130	Phe 130	Ile 130	Tyr 130	Phe 130	Leu 135	Phe 135	Gly 135	Thr 135	Ser 140	Arg 140	His 140	Ile 140	Ser 140	Val 140
Gly 145	Thr 145	Phe 145	Ala 145	Val 145	Met 150	Ser 150	Val 150	Met 150	Val 150	Gly 155	Ser 155	Val 155	Thr 155	Glu 160	Ser 160
Leu 165	Ala 165	Pro 165	Asp 165	Glu 165	Asp 165	Phe 165	Leu 170	Gln 170	Ala 170	Ser 170	Asn 170	Ser 170	Thr 170	Val 175	Asp 175
Val 180	Ala 180	Ala 180	Arg 180	Asp 180	Ala 180	Arg 180	Arg 185	Val 185	Gln 185	Leu 185	Ala 185	Ser 185	Ala 185	Leu 185	Ser 185
Val 195	Leu 195	Val 195	Gly 195	Leu 195	Phe 195	Gln 195	Val 200	Gly 200	Leu 200	Gly 200	Leu 200	Val 205	His 205	Phe 205	Gly 205
Phe 210	Val 210	Val 210	Thr 210	Tyr 210	Leu 210	Ser 215	Glu 215	Pro 215	Leu 215	Val 215	Arg 220	Gly 220	Tyr 220	Thr 220	Thr 220
Ala 225	Ala 225	Ser 225	Val 225	Gln 225	Val 230	Phe 230	Ile 230	Ser 230	Gln 230	Leu 235	Lys 235	Tyr 235	Val 235	Phe 240	Gly 240
Leu 245	His 245	Leu 245	Ser 245	Ser 245	Arg 245	Ser 245	Gly 245	Pro 245	Leu 250	Ser 250	Leu 250	Ile 250	Tyr 250	Thr 255	Ala 255
Leu 260	Glu 260	Val 260	Cys 260	Trp 260	Asn 260	Leu 260	Pro 265	Lys 265	Thr 265	Val 265	Val 265	Asn 265	Thr 270	Leu 270	Val 270
Thr 275	Ala 275	Val 275	Val 275	Ala 275	Gly 275	Leu 275	Val 280	Leu 280	Val 280	Leu 280	Val 280	Lys 285	Leu 285	Leu 285	Asn 285
Asn 290	Lys 290	Leu 290	Gln 290	Lys 290	His 290	Leu 295	Pro 295	Val 295	Pro 295	Leu 295	Pro 300	Gly 295	Glu 295	Leu 295	Leu 295
Thr 305	Leu 305	Ile 305	Gly 305	Ala 305	Thr 310	Gly 310	Ile 310	Ser 310	Tyr 310	Gly 315	Ile 315	Gly 315	Leu 315	Asn 315	Glu 320
Val 325	Asp 325	Val 325	Val 325	Gly 325	Arg 325	Ile 325	Pro 325	Ala 325	Gly 330	Leu 330	Val 330	Pro 330	Pro 330	Val 335	Ala 335
Pro 340	Ser 340	Pro 340	Gln 340	Leu 340	Phe 340	Ala 340	Arg 340	Leu 345	Val 345	Gly 345	Asn 345	Ala 345	Phe 350	Ala 350	Ile 350
Ala 355	Val 355	Val 355	Gly 355	Phe 355	Ala 355	Ile 355	Ala 360	Ile 360	Ser 360	Leu 360	Gly 360	Lys 365	Ile 365	Phe 365	Ala 365
Leu 370	Arg 370	His 370	Gly 370	Tyr 370	Arg 370	Val 375	Asp 375	Ser 375	Asn 375	Gln 375	Glu 380	Leu 380	Val 380	Ala 380	Leu 380
Gly 385	Leu 385	Ser 385	Asn 385	Phe 385	Ile 390	Gly 390	Gly 390	Ile 390	Phe 390	Gln 395	Cys 395	Phe 395	Pro 395	Val 395	Ser 400
Cys 405	Ser 405	Met 405	Ser 405	Arg 405	Ser 405	Leu 405	Val 405	Gln 405	Glu 410	Ser 410	Thr 410	Gly 410	Gly 410	Asn 415	Thr 415
Gln 420	Val 420	Ala 420	Gly 420	Ala 420	Ile 420	Ser 420	Ser 425	Leu 425	Phe 425	Ile 425	Leu 425	Ile 430	Ile 430	Ile 430	Leu 430
Lys 435	Leu 435	Gly 435	Glu 435	Leu 435	Phe 435	Gln 440	Asp 440	Leu 440	Pro 440	Lys 440	Ala 445	Val 445	Leu 445	Ala 445	Ala 445

Val Ile Ile Val Asn Leu Lys Gly Met Leu Met Gln Phe Thr Asp Leu
 450 455 460
 Cys Ser Leu Trp Lys Thr Asn Arg Val Asp Leu Leu Ile Trp Leu Val
 465 470 475 480
 Thr Phe Val Ala Thr Ile Leu Leu Asn Leu Asp Leu Gly Leu Ala Val
 485 490 495
 Ala Ile Ala Phe Ser Met Leu Leu Val Val Arg Ile Gln Leu Pro
 500 505 510
 His Tyr Ser Val Leu Gly Gln Met Pro Asp Thr Asp Val Tyr Arg Asp
 515 520 525
 Val Ala Glu Tyr Ser Glu Ala Arg Glu Val Pro Gly Val Lys Ile Phe
 530 535 540
 Arg Ser Ser Thr Thr Met Phe Phe Ala Asn Ala Glu Leu Tyr Gly Asp
 545 550 555 560
 Ala Leu Lys Gln Arg Cys Gly Val Asp Val Asp His Leu Ile Ser Gln
 565 570 575
 Lys Lys Lys Leu Leu Arg Arg Gln Glu Leu Lys Leu Lys Arg Leu Gln
 580 585 590
 Lys Gly Asn Lys Leu Val Lys Lys Asp Thr Ser Ile Ser Ile Asn Val
 595 600 605
 Asn Thr Gly Ile Thr Asn Ile Glu Ser Asn Asp Val Glu Gly Ser Asn
 610 615 620
 Val Lys Val Ser Ala Glu Asn Glu Leu Glu Asp Ile Ala Ala Gly Asp
 625 630 635 640
 Gln Glu Asp Ala Lys Ala Pro Ala Met Ser Ser Leu Lys Ala Leu Gly
 645 650 655
 Leu Pro Gln Pro Asp Phe His Ser Leu Ile Leu Asp Leu Gly Thr Leu
 660 665 670
 Ser Phe Val Asp Thr Val Cys Leu Lys Ser Leu Lys Asn Ile Phe Arg
 675 680 685
 Asp Phe Arg Glu Ile Glu Val Glu Val Tyr Met Ala Ala Cys His Ser
 690 695 700
 Pro Val Val Ser Gln Leu Glu Ala Gly His Phe Phe Asp Ala Ser Ile
 705 710 715 720
 Thr Lys Gln His Leu Phe Ala Ser Val His Asp Ala Val Ile Phe Ala
 725 730 735
 Leu Gln His Pro Arg Ser Gly Pro Val Ser Pro Ala Leu Val Thr Lys
 740 745 750
 Leu

<210> 92
 <211> 17
 <212> PRT
 <213> Mus musculus
 <400> 92

Gln Glu Gln Leu Glu Asp Leu Gly His Trp Gly Pro Ala Ala Lys Thr
 1 5 10 15

His

<210> 93
 <211> 19
 <212> PRT
 <213> Mus musculus
 <400> 93

Lys Val His Gln Gly Glu Glu Leu Gln Asp Val Val Ser Ser Asn Gln
 1 5 10 15

Glu Asp Ala

<210> 94
 <211> 17
 <212> PRT
 <213> Mus musculus
 <400> 94

Tyr Arg Leu Thr Gly Leu Asp Ala Gly His Ser Ala Thr Arg Lys Asp
 1 5 10 15

Gln

<210> 95
 <211> 17
 <212> PRT
 <213> Homo sapiens
 <400> 95

Lys Glu Gln His Asn Val Ser Pro Arg Asp Ser Ala Glu Gly Asn Asp
 1 5 10 15

Ser

<210> 96
 <211> 739
 <212> PRT
 <213> Homo sapiens
 <400> 96

Met Ser Ser Glu Ser Lys Glu Gln His Asn Val Ser Pro Arg Asp Ser
 1 5 10 15

Ala Glu Gly Asn Asp Ser Tyr Pro Ser Gly Ile His Leu Glu Leu Gln
 20 25 30

Arg Glu Ser Ser Thr Asp Phe Lys Gln Phe Glu Thr Asn Asp Gln Cys
 35 40 45

Arg Pro Tyr His Arg Ile Leu Ile Glu Arg Gln Glu Lys Ser Asp Thr
 50 55 60

Asn Phe Lys Glu Phe Val Ile Lys Lys Leu Gln Lys Asn Cys Gln Cys
 65 70 75 80

Ser Pro Ala Lys Ala Lys Asn Met Ile Leu Gly Phe Leu Pro Val Leu
 85 90 95

Gln Trp Leu Pro Lys Tyr Asp Leu Lys Lys Asn Ile Leu Gly Asp Val
 100 105 110

Met Ser Gly Leu Ile Val Gly Ile Leu Leu Val Pro Gln Ser Ile Ala
 115 120 125
 Tyr Ser Leu Leu Ala Gly Gln Glu Pro Val Tyr Gly Leu Tyr Thr Ser
 130 135 140
 Phe Phe Ala Ser Ile Ile Tyr Phe Leu Leu Gly Thr Ser Arg His Ile
 145 150 155 160
 Ser Val Gly Ile Phe Gly Val Leu Cys Leu Met Ile Gly Glu Thr Val
 165 170 175
 Asp Arg Glu Leu Gln Lys Ala Gly Tyr Asp Asn Ala His Ser Ala Pro
 180 185 190
 Ser Leu Gly Met Val Ser Asn Gly Ser Thr Leu Leu Asn His Thr Ser
 195 200 205
 Asp Arg Ile Cys Asp Lys Ser Cys Tyr Ala Ile Met Val Gly Ser Thr
 210 215 220
 Val Thr Phe Ile Ala Gly Val Tyr Gln Val Ala Met Gly Phe Phe Gln
 225 230 235 240
 Val Gly Phe Val Ser Val Tyr Leu Ser Asp Ala Leu Leu Ser Gly Phe
 245 250 255
 Val Thr Gly Ala Ser Phe Thr Ile Leu Thr Ser Gln Ala Lys Tyr Leu
 260 265 270
 Leu Gly Leu Asn Leu Pro Arg Thr Asn Gly Val Gly Ser Leu Ile Thr
 275 280 285
 Thr Trp Ile His Val Phe Arg Asn Ile His Lys Thr Asn Leu Cys Asp
 290 295 300
 Leu Ile Thr Ser Leu Leu Cys Leu Leu Val Leu Leu Pro Thr Lys Glu
 305 310 315 320
 Leu Asn Glu His Phe Lys Ser Lys Leu Lys Ala Pro Ile Pro Ile Glu
 325 330 335
 Leu Val Val Val Val Ala Ala Thr Leu Ala Ser His Phe Gly Lys Leu
 340 345 350
 His Glu Asn Tyr Asn Ser Ser Ile Ala Gly His Ile Pro Thr Gly Phe
 355 360 365
 Met Pro Pro Lys Val Pro Glu Trp Asn Leu Ile Pro Ser Val Ala Val
 370 375 380
 Asp Ala Ile Ala Ile Ser Ile Ile Gly Phe Ala Ile Thr Val Ser Leu
 385 390 395 400
 Ser Glu Met Phe Ala Lys Lys His Gly Tyr Thr Val Lys Ala Asn Gln
 405 410 415
 Glu Met Tyr Ala Ile Gly Phe Cys Asn Ile Ile Pro Ser Phe Phe His
 420 425 430
 Cys Phe Thr Thr Ser Ala Ala Leu Ala Lys Thr Leu Val Lys Glu Ser
 435 440 445
 Thr Gly Cys His Thr Gln Leu Ser Gly Val Val Thr Ala Leu Val Leu
 450 455 460
 Leu Leu Val Leu Leu Val Ile Ala Pro Leu Phe Tyr Ser Leu Gln Lys
 465 470 475 480

Ser Val Leu Gly Val Ile Thr Ile Val Asn Leu Arg Gly Ala Leu Arg
 485 490 495
 Lys Phe Arg Asp Leu Pro Lys Met Trp Ser Ile Ser Arg Met Asp Thr
 500 505 510
 Val Ile Trp Phe Val Thr Met Leu Ser Ser Ala Leu Leu Ser Thr Glu
 515 520 525
 Ile Gly Leu Leu Val Gly Val Cys Phe Ser Ile Phe Cys Val Ile Leu
 530 535 540
 Arg Thr Gln Lys Pro Lys Ser Ser Leu Leu Gly Leu Val Glu Glu Ser
 545 550 555 560
 Glu Val Phe Glu Ser Val Ser Ala Tyr Lys Asn Leu Gln Thr Lys Pro
 565 570 575
 Gly Ile Lys Ile Phe Arg Phe Val Ala Pro Leu Tyr Tyr Ile Asn Lys
 580 585 590
 Glu Cys Phe Lys Ser Ala Leu Tyr Lys Gln Thr Val Asn Pro Ile Leu
 595 600 605
 Ile Lys Val Ala Trp Lys Lys Ala Ala Lys Arg Lys Ile Lys Glu Lys
 610 615 620
 Val Val Thr Leu Gly Gly Ile Gln Asp Glu Met Ser Val Gln Leu Ser
 625 630 635 640
 His Asp Pro Leu Glu Leu His Thr Ile Val Ile Asp Cys Ser Ala Ile
 645 650 655
 Gln Phe Leu Asp Thr Ala Gly Ile His Thr Leu Lys Glu Val Arg Arg
 660 665 670
 Asp Tyr Glu Ala Ile Gly Ile Gln Val Leu Leu Ala Gln Cys Asn Pro
 675 680 685
 Thr Val Arg Asp Ser Leu Thr Asn Gly Glu Tyr Cys Lys Lys Glu Glu
 690 695 700
 Glu Asn Leu Leu Phe Tyr Ser Val Tyr Glu Ala Met Ala Phe Ala Glu
 705 710 715 720
 Val Ser Lys Asn Gln Lys Gly Val Cys Val Pro Asn Gly Leu Ser Leu
 725 730 735
 Ser Ser Asp